

EXHIBIT 40

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**UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK**

NIKE, INC.,

Plaintiff,

v.

STOCKX LLC,

Defendant.

Case No. 1:22-cv-000983-VEC

EXPERT REPORT OF CATHERINE TUCKER

MAY 5, 2023

TABLE OF CONTENTS

I.	Introduction.....	1
II.	Allegations, assignment, and conclusions	2
	A. Allegations	2
	B. Assignment	3
	C. Summary of conclusions.....	3
III.	Background.....	5
	A. Parties.....	5
	1. StockX.....	5
	2. Nike.....	6
IV.	How resale marketplaces including StockX create value	7
	A. The economics of resale marketplaces	7
	B. How StockX works and creates value	11
V.	Resale marketplaces and the need to create and maintain trust.....	13
	A. A primer on coring.....	13
	B. Trust in online and resale marketplaces.....	14
	1. Marketplaces that fail to establish or that lose trust risk their reputation and the viability of their platform.....	14
	2. Successful marketplaces invest considerable resources in building and maintaining trust	21
VI.	Vault NFTs are a technology to further facilitate transactions on the StockX platform.....	34
	A. Technologies and features that facilitate the trade of physical objects.....	34
	1. Untethering ownership from physical possession of assets.....	34
	2. Technologies and services to reduce information costs through reduced verification costs	36
	3. Storage solutions such as vaults.....	38
	B. Vault NFTs reduce trading costs for sneaker traders.....	39
	1. Sneaker traders are a key group of StockX’s users.....	39
	2. Vault NFTs.....	41
	3. Vault NFTs reduce trading costs, including by eliminating the costs of shipping and re-verification.....	41
	C. Other examples of innovative uses of physical NFTs and storage solutions	45
VII.	The evolution of Vault NFT prices linked to Nike shoes	47
	A. How the price of Vault NFTs for Nike shoes evolved in 2022	47
	1. The initial pricing of Vault NFTs	48

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

2. The January 2022 spike	49
3. February to May 2022: The rapid convergence to the physical price.....	50
B. The evolution of Vault NFT prices is similar to that of many other novel asset classes subject to irrational exuberance among users	53
APPENDIX A – CURRICULUM VITAE.....	A-1
APPENDIX B – PRIOR TESTIMONY.....	B-1
APPENDIX C – MATERIALS CONSIDERED.....	C-1
APPENDIX D – ADDITIONAL DATA ANALYSES.....	D-1

I. INTRODUCTION

1. I am the Sloan Distinguished Professor of Management Science at MIT Sloan at the Massachusetts Institute of Technology (“MIT”) in Cambridge, Massachusetts. I received an undergraduate degree in Politics, Philosophy and Economics from Oxford University in the United Kingdom. I received a PhD in Economics from Stanford University in 2005. I have been a professor at MIT since completing my Ph.D.

2. My academic specialty lies in studying the evolution of business models in the digital era. One area in which I have specialized has been the study and determinants of success of platform business models in digital settings. Given this expertise, I was recently asked to present in the introductory plenary session to the FTC hearings on the current economic understanding of multi-sided platforms.¹ I teach our Platform Strategy executive education course at MIT Sloan.²

3. I am Senior Editor at *Marketing Science*. I have been an Associate Editor at *Management Science*, *Marketing Science* and the *Journal of Marketing Research*, and Co-Editor of the *Journal of Quantitative Marketing and Economics*. I was a Co-Editor of the recent National Bureau of Economics Research volume on the Economics of Digitization. I received a National Science Foundation CAREER Award, which is the National Science Foundation’s most prestigious award in support of junior faculty who “exemplify the role of teacher-scholars through outstanding research, excellent education, and the integration of education and research within the context of the mission of their organizations.”³ I have testified twice before Congress on policy issues relating to new digital technologies and have presented my research to the Federal Trade Commission, the IMF, the Federal Communications Commission, and the OECD. I have published multiple academic papers in leading scientific, economics, marketing,

¹ Federal Trade Commission, *FTC Hearing 3: Oct. 15, Network Effects in Multi-Sided Platforms*, October 15, 2018, www.ftc.gov/news-events/audio-video/video/ftc-hearing-3-oct-15-welcome-remarks-session-1-economics-multi-sided.

² MIT Sloan Executive Education, “Platform Strategy: Building and Thriving in a Vibrant Ecosystem,” <https://executive.mit.edu/on/demandware.static/-/Sites-master-catalog-msee/default/dwc6b9d6db/brochures/Platform%20Strategy.pdf>.

³ National Science Foundation, “Faculty Early Career Development Program (CAREER),” https://web.archive.org/web/20161001075217/https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503214.

management, and information systems journals, including *Science*, *Journal of Political Economy*, *RAND Journal of Economics*, *Management Science* and *Information Systems Research*.

4. I am being compensated for my services in this matter at my customary hourly rate of \$1,400. In preparing this report, I have been assisted by certain employees of Analysis Group. My curriculum vitae and list of prior testimony are attached as Appendices A and B.

II. ALLEGATIONS, ASSIGNMENT, AND CONCLUSIONS

A. Allegations

5. Nike alleges that StockX engages in “selling counterfeit Nike goods, and making false and/or misleading claims regarding the purported authenticity of those goods.”⁴ According to Nike, StockX “knows that its false and/or misleading statements about the authenticity of the Nike goods for sale on its platform deceives consumers. Nevertheless, StockX continues to engage in such improper and unlawful business practices to attract consumers to its platform.”⁵ Nike alleges that these actions constitute “false advertising and false representations.”⁶

6. Nike also alleges that, “without Nike’s authorization or approval, StockX is ‘minting’ NFTs that prominently use Nike’s trademarks, marketing those NFTs using Nike’s goodwill, and selling those NFTs at heavily inflated prices to unsuspecting consumers who believe or are likely to believe that those ‘investible digital assets’ (as StockX calls them) are, in fact, authorized by Nike when they are not.”⁷

7. Further, Nike claims that “Nike-branded Vault NFTs ... are, in fact, new virtual products that StockX has bundled with additional StockX services (e.g., ‘Vault Services’) and unspecified benefits (e.g., ‘exclusive access to StockX releases, promotions, events’).”⁸ Nike claims that “StockX has sold Nike-branded NFTs at prices many multiples above the price of the

⁴ First Amended Complaint, *Nike, Inc. v. StockX LLC*, No. 1:22-cv-000983-VEC, May 25, 2022 (“First Amended Complaint”), ¶ 15.

⁵ First Amended Complaint, ¶ 113.

⁶ First Amended Complaint, ¶ 175.

⁷ First Amended Complaint, ¶ 5.

⁸ First Amended Complaint, ¶ 6

physical Nike shoe” and that “certain Nike-branded Vault NFTs [were] still selling for thousands of dollars above the price of the physical shoe” as of May 2022.⁹

B. Assignment

8. I have been asked by counsel to:
 - a. Explain the features and characteristics of StockX’s marketplace and business model;
 - b. Explain how trust contributes to the success of resale marketplaces, and the potential implications for such platforms if they tolerate fraud on their platform;
 - c. Assess how the Vault NFTs create value for their purchasers or holders by making it easier and cheaper to transact on StockX; and
 - d. Assess the price patterns of Vault NFTs linked to physical Nike shoes, including interpretations that explain the observed pricing patterns.

C. Summary of conclusions

9. Based on my expertise in economics and my analysis of relevant documents in this case I have reached the following opinions:
 - a. StockX—like other online resale marketplaces—creates value by using digital technologies to make it easier for buyers and sellers to trade. Those technologies and features include, among others, a single streamlined page for a given product, a bid or buy pricing mechanism, and a payment processing system, which together reduce search, information, and transaction costs faced by buyers and sellers. Together, these technologies and features have allowed StockX to overcome various drawbacks of the offline resale of high-end products and collectibles, such as the distances in time and space that make matching buyers and sellers a challenge. See Section IV.

⁹ First Amended Complaint, ¶¶ 63, 65.

- b. The success of resale marketplaces hinges on their ability to enable positive interactions between buyers and sellers and establish trust between both groups. StockX—like other similar platforms—has an incentive to generate and preserve trust on its platform and would risk the success of its business if it did not take steps to prevent the sale of counterfeit items, which could lead to an erosion of buyers’ trust. See Section V.
 - i. StockX relies on various features and technologies to increase trust and accountability on the platform. One of its most salient trust-building features is its verification process and the accompanying “StockX Verified” label for all products sold on the platform. Using a verification process has benefits relative to other trust-building practices, like ratings and review systems. Ratings and review systems are often relied upon by online marketplaces, but their informativeness varies, especially in situations where buyers cannot judge the quality of their purchase at the time they write the review.
 - ii. StockX provides detailed data about historical prices and live bids and asks for items on the platform. Such transparency helps ensure that neither buyers nor sellers trade at an unfair price on the platform, and it further discourages the sale of counterfeits by drawing attention to prices that are too low to be credible.
- c. Multiple features and technologies have been developed throughout recent history to facilitate the trade of physical goods, including (1) untethering ownership from physical possession, (2) innovations that reduce information costs through reduced verification costs, and (3) storage solution vaults that improve the tradability of physical goods. StockX’s Vault NFTs are an innovation that incorporates these three features. As a result, StockX’s Vault NFTs reduce transaction costs associated with the trade of physical goods, which can be beneficial to consumers interested in trading sneakers and other collectibles. See Section VI.

- d. StockX initially priced the Vault NFTs at a discount compared to the price of the physical pairs on the platform. On the first day of trading, the prices of the first Vault NFTs linked to Nike sneakers spiked. But in a matter of weeks, transaction volume and prices dropped, and prices converged to a level close to the price of physical shoes, as expected by StockX’s leadership. See Section VII.A.
- e. High initial prices followed by a price decline for traded assets are not an unusual phenomenon, particularly for new technologies that investors find difficult to value in their early days. The price dynamics observed for StockX’s Vault NFTs are therefore not unlike the ones seen for a range of assets linked to other new technologies, including other blockchain-based decentralized finance innovations. In the case of Vault NFTs, the uncertainty regarding the valuation of the new asset, the underlying technology, and the adoption rate of the new product may have caused initial high demand followed by a rapid correction, possibly once uncertainty and initial over-excitement faded. See Section VII.B.

10. In forming my opinions for this report, I have relied on my experience and the sources listed in Appendix C. If additional relevant information is made available to me, I may adjust or supplement my opinions.

III. BACKGROUND

A. Parties

1. *StockX*

11. StockX is an online resale marketplace that connects buyers and resellers of “the hottest sneakers, apparel, electronics, collectibles, trading cards and accessories.”¹⁰ StockX grew out of a company created in 2012 that tracked sneaker resale data, including average price, volume, and volatility, on eBay.¹¹ Co-founders Dan Gilbert, Josh Lubner, and Greg Schwartz

¹⁰ StockX, “The Current Culture Marketplace,” <https://stockx.com/about/how-it-works/> (“Our mission is to provide access to the world’s most coveted items in the smartest way possible. Buy and sell the hottest sneakers, apparel, electronics, collectibles, trading cards and accessories.”).

¹¹ StockX, “Campless,” August 30, 2013, <https://stockx.com/news/campless>.

developed StockX to provide an online marketplace for high-end sneakers.¹² Over time, the StockX marketplace has expanded to facilitate the trade of other luxury items, including apparel, trading cards, accessories such as handbags and watches, and other various collectibles. In addition, in January 2022, StockX began offering Vault NFTs: digital tokens tied to physical products such as sneakers, trading cards, watches, and skateboard decks stored in StockX’s climate-controlled, high-security vault.¹³

2. Nike

12. Nike is the world’s largest producer of athletic shoes and sports apparel.¹⁴ A key event in the history of Nike and the collectible nature of its sneakers was its partnership with Michael Jordan in 1984, followed by the release of the Nike Air Jordan 1.¹⁵ Nike has since continued to develop more mainstream offerings, such as running clothing, alongside high-profile collaborations with celebrities like designer Virgil Abloh and rapper/musician Travis

¹² Crain’s Detroit Business, “Greg Schwartz, 38,” August 30, 2019, <https://www.crainsdetroit.com/awards/greg-schwartz-40-under-40-2019> (“That ‘something’ was an online marketplace for high-end collectibles, starting with luxury sneakers. The company has since branched out into luxury handbags, watches and streetwear.”); Erin Griffith, “Buy Low-Tops, Sell High-Tops: StockX Sneaker Exchange is Worth \$1 Billion,” *The New York Times*, June 26, 2019, <https://www.nytimes.com/2019/06/26/technology/trading-sneakers-stockx.html> (“StockX grew out of Campless, a website that Josh Luber, a former I.B.M. consultant, built in 2012 to track sneaker resale prices on eBay. After Mr. Luber delivered a popular TED Talk titled ‘Why sneakers are a great investment,’ Dan Gilbert, owner of the Cleveland Cavaliers, and a co-founder, Greg Schwartz, acquired Campless. Campless eventually transformed itself into StockX, a marketplace to buy and sell sneakers.”).

¹³ StockX, “NFTs,” <https://stockx.com/lp/nfts> (“Introducing Vault NFTs on StockX, new digital tokens providing unprecedented access and utility for our customers. Each Vault NFT is tied to a physical product (as depicted on the NFT), which is stored in our brand new, climate-controlled, high-security vault.”).

¹⁴ Bloomberg, “Phil Knight & family,” <https://www.bloomberg.com/billionaires/profiles/philip-h-knight> (“Knight is the founder and largest shareholder of Nike, the world’s biggest maker of athletic shoes and sports apparel. The Beaverton, Oregon-based company operates more than 1,100 stores and had revenue of \$44.5 billion in the year to May 2021.”).

¹⁵ Sotheby’s, “The Meteoric Rise of the Nike Air Jordan Brand,” January 25, 2023, <https://www.sothebys.com/en/articles/the-meteoric-rise-of-the-jordan-brand> (“In 1984, Nike signed up-and-coming basketball rookie Michael Jordan to an unprecedented \$500,000 a year endorsement deal ... But it was the release of the first Jordan shoe in 1985 that truly propelled the Jordan brand to new heights. The first Jordan shoe, the Nike Air Jordan 1, was an instant hit, kicking off modern sneaker collecting as we know it.”); Expert Report of DeJongh “Dee” Wells, *Nike Inc. v. StockX LLC*, 1:22-cv-000983-VEC, May 5, 2023 (“Wells Report”), ¶ 45 (“The ‘second phase’ of Sneakerhead culture started with Michael Jordan wearing the Nike Air Ship in 1984, which served as the inspiration for the Air Jordan 1, which was released to the market in 1985. Michael Jordan’s endorsement of what became his signature sneakers proved to be a watershed moment in the development of the Sneakerhead culture that found ‘its way more and more into the general public,’ by transcending cultural boundaries that existed during the 1970s. The release of the Air Jordan was deemed a ‘turning point’ in the Sneakerhead culture, and sneakers’ appeal became broader.”).

Scott.¹⁶ Nike releases certain shoes in limited editions, which often sell out. In those cases, limited edition sneakers will typically be traded on the secondary market, often at prices much higher than the retail price.¹⁷

IV. HOW RESALE MARKETPLACES INCLUDING STOCKX CREATE VALUE

A. The economics of resale marketplaces

13. Marketplaces are a type of multi-sided platform, and specifically a two-sided platform, which is an economics term that refers to businesses that facilitate interactions between multiple groups of users. This type of business model is not new. Early examples include medieval fairs, which brought together buyers and sellers of agricultural products.¹⁸ However,

¹⁶ Vogue, “From Sacai to Jacquemus: 14 Nike Sneaker Collabs to Know and Shop,” <https://www.vogue.com/article/14-nike-sneaker-collabs-to-know-and-shop> (“Virgil Abloh of Off-White and Nike joined forces in 2019 to create a Waffle Racer built for speed and optimized for style.”); High Snobiety, “The Complete Beginner’s Guide to Every Travis Scott Sneaker Collaboration,” 2019, <https://www.highsnobiety.com/p/travis-scott-jordan-nike-collab> (“All the while, Scott’s collaboration with Nike and Jordan Brand has been picking up steam.”); Wells Report, ¶ 6 (“Alongside its mainstream products, such as running shoes and clothing, Nike has joined other brands in releasing limited edition sneakers, including through collaborations with celebrities like fashion designer Virgil Abloh and rapper Travis Scott.”), ¶ 54 (“There are additional ways brands can build hype for a product launch outside of social media. For instance, in 2022, Nike launched a raffle for the chance to buy the new ‘Reverse Mocha’ Jordan 1 Low designed by Travis Scott. The raffle drew 2.4 million entries in its first 30 minutes, ultimately reaching 3.8 million entries, a record for Nike’s SNKRS app. Notably, this was just an entry for the chance to buy a ‘Reverse Mocha’; winners still had to purchase the actual sneaker.”), ¶ 62 (“After Virgil Abloh’s passing in 2021, the price of Off-White sneakers, designed by Abloh in collaboration with Nike, spiked on resale platforms and stores. While prices settled in the days following his death, they generally remained higher than they were when Abloh was alive.”).

¹⁷ Wells Report, ¶ 75 (“Brands, including Nike, use scarcity as a marketing device, capitalizing on Sneakerheads’ desire to own rare sneakers. Footwear brand ASICS’s Lifestyle Director Mike Jensen noted ‘scarcity is currency.’ Nike calls this strategy ‘quick strikes,’ reporting over 40 collab/limited edition sneakers on its website, and featuring a calendar of upcoming releases, with new limited editions dropping daily. More recently, Nike has begun selling limited-release shoes exclusively through a lottery system only accessible in its SNKRS app.”), ¶ 76 (“The resale market for sneakers has exploded in recent years and is expected to continue its rapid growth, estimated to reach \$30 billion globally by 2030. The resale market has played a vital role in making sneakers more accessible. It is, and has always been, an important means through which Sneakerheads can access the rare and limited release styles that they may not have been able to obtain directly from the brand. When limited releases sell out when released by the brand, they then are available only through the resale market, often at prices much higher than the original retail price.”).

¹⁸ Steven Tadelis, “Reputation and Feedback Systems in Online Platform Markets,” *NBER Working Paper*, 2016, pp. 1-33, p. 2 (“Coordinating where and when trade took place was an important historical innovation, which can be seen in the introduction of trade fairs in medieval Europe.”); Paul Belleflamme and Martin Peitz, *The Economics of Platforms*, Cambridge, UK, Cambridge University Press, 2021, p. 10 (“According to historians, European trade took off at the end of the twelfth century in what is now the North of France, in the county of Champagne. It is in this period that this county started to host regular trade fairs, which lasted for six weeks and

thanks to digital technologies, the number of two-sided digital platforms—including resale marketplaces—has grown in the last 15 to 20 years. For example, eBay and Etsy help buyers and sellers find each other to exchange goods, while OpenTable makes it easier for diners to make reservations at restaurants with availability, Airbnb makes it easier for hosts with spare rooms and guests to find each other, and Bumble makes it easier for singles looking for dates to match.

14. Marketplaces connect buyers and sellers of items, new or used, and make it easier for them to meet and exchange products and services. Marketplaces are characterized by the three fundamental features of two-sided platforms:

- a. A marketplace brings together two customer groups: buyers and sellers. In some cases, buyers and sellers are two distinct groups, as is the case, for instance, for farmers and city-dwellers in the context of a farmer’s market. In other cases, platform users may use the platform both to buy and to sell, as is the case, for instance, in a stock market. A marketplace provides its services to both groups and therefore views both groups as customers.
- b. Marketplaces create value by facilitating and encouraging exchanges between buyers and sellers. Buyers and sellers would like to interact but may face various types of search, information, and transaction costs that make interactions costly or inconvenient.¹⁹ Search costs are incurred by buyers and sellers to find each other; for example, they could consist of the time spent trying to find short-term accommodations available in a given city on certain dates.²⁰ Information costs refer to costs that buyers incur while trying to gather information and learn about

rotated among six cities. Merchants came from all over Europe because they were confident that they would meet each other at these fairs.”).

¹⁹ David Evans and Michael Noel, “Defining Markets that Involve Multi-sided Platform Businesses: An Empirical Framework with an Application to Google’s Purchase of DoubleClick,” *Working Paper*, No. 07–18, 2007, pp. 1–47, p. 3 (“[Multi-sided platforms] provide goods or services to several distinct groups of customers who need each other in some way and who rely on the platform to intermediate transactions between them. They typically reduce transaction costs and thereby permit value-creating exchanges to take place that otherwise would not occur. In particular they facilitate the realization of indirect network externalities, and externalities in use, between the members of distinct customer groups.”); Paul Belleflamme and Martin Peitz, *The Economics of Platforms*, Cambridge, UK, Cambridge University Press, 2021, p. 39 (“[Exchanges] help ‘buyers’ and ‘sellers’ search for feasible contracts and for the best prices.”).

²⁰ Andrei Hagiu, “Multi-sided Platforms: From Microfoundations to Design and Expansion Strategies,” *Working Paper*, No. 09-115, 2008, pp. 1-25, p. 5 (“*Search costs* are costs incurred by the multiple sides *before* they actually interact, in order to determine the best ‘trading partners’.”).

sellers and their products, and that sellers incur in trying to learn about possible buyers, after they have found each other; for instance, learning details about the quality of the available short-term accommodation.²¹ Transaction costs are incurred by one or both sides in the process of transacting, that is, once a buyer and seller have matched; for instance, finding a convenient way to pay for the accommodation.²² A marketplace creates value by lowering costs generated by frictions such as search, information, and transaction costs.

- c. Successful marketplaces enable what economists call positive indirect network effects, that is, the greater benefits that customers on one side of the platform enjoy as a result of interacting with more customers on the other side of the platform.²³ On a marketplace, buyers benefit from the presence of more sellers on the platform and vice-versa. This is because a seller benefits if there are more buyers to whom they can sell, and a buyer benefits if there are more sellers from whom they can buy. A two-sided platform is able to succeed to the extent that it can coordinate the presence of users on both sides of the platform.²⁴

15. In some cases, the marketplaces mostly involve sellers that sell their own goods or services; for example, farmers through farmers markets, developers through Apple’s App Store,

²¹ David Evans, “The Antitrust Economics of Multi-Sided Platform Markets,” *Yale Journal on Regulation*, Vol. 20, 2003, pp. 325-381, pp. 332-333 (“Generally, in matchmaking markets customers of each type benefit from being able to search a larger group of customers of the other type for a suitable match. They also benefit from being able to search among a group that has been narrowed to suitable matches ... Information and transaction costs as well as free-riding make it difficult in practice for members of distinct customer groups to internalize the externalities on their own.”).

²² Andrei Hagiu, “Multi-sided Platforms: From Microfoundations to Design and Expansion Strategies,” *Working Paper*, No. 09-115, 2008, pp. 1-25, p. 6 (“The second fundamental function is to reduce the costs incurred during the transactions themselves, i.e. *after* search is over and the transacting parties have found each other. A portion of these costs is generally common to all transactions between different members of the relevant sides of the MSP, which is why we call them ‘shared’ or ‘duplicate’ costs.”).

²³ David Evans and Richard Schmalensee, *Matchmakers: The New Economics of Multisided Platforms*, Boston, Harvard Business Review Press, 2016, p. 25 (“A network effect is *indirect* when the value of a matchmaker to one group of customers depends on how many members of a *different* group participate.”). Echoing Dr. Evans, I abbreviate positive indirect network effects as indirect network effects in this report.

²⁴ David Evans and Richard Schmalensee, *Matchmakers: The New Economics of Multisided Platforms*, Boston, Harvard Business Review Press, 2016, p. 25 (“A network effect is indirect when the value of a matchmaker to one group of customers depends on how many members of a different group participate.”); Paul Belleflamme and Martin Peitz, *The Economics of Platforms*, Cambridge, UK, Cambridge University Press, 2021, p. 17 (“On a trading platform, buyers are, everything else being equal, typically better off the more sellers are present and vice versa: Both groups exert a positive cross-group network effect on the other group.”).

and hosts through Airbnb. In other cases, the marketplaces focus on facilitating the resale of goods, such as art auction houses like Christie's and Sotheby's, Poshmark, Depop, or eBay. Those marketplaces are called resale, or secondary, marketplaces. A marketplace may cater to both types of sellers.

16. Online marketplaces have grown as digital technology and procedures have made it easier to facilitate transactions between sellers and buyers online.²⁵ Examples of online resale marketplaces for fashion and collectible items, in addition to StockX, include the online fashion consignment platforms Depop, Vestiaire Collective, and thredUP; sneakers and apparel platform GOAT; and the watch-selling platform Chrono24.

17. The value offered by online marketplaces as compared to offline alternatives they replaced is evident in many contexts. Before the introduction of Airbnb and similar platforms, it was difficult for guests to find short-term residential lodging at a particular destination without pre-existing relationships or a knowledge of a local, short-term rental company. Consumers without that knowledge or those relationships were limited to hotels which may have been too expensive or fully booked. Symmetrically, it was difficult for property owners to offer a room, apartment, or house for short-term stays. Transactions simply did not occur, and both guests and property owners with idle homes were less well-off. Similarly, originally launched as an online auction site, eBay helped people looking to trade collectibles find one another and agree on a price through an electronic bidding process. Absent the website, collectors would have to incur significant costs to transact; for instance, traveling to conventions to find fellow buyers and sellers and transporting goods to and from such conventions. More recently, the online shopping platform Poshmark emerged as an alternative to physical consignment stores, which are generally space-constrained and can only serve buyers and sellers within a single geographic area. By removing geographic barriers to trade, online marketplaces like eBay and Poshmark help products reach consumers who value them most, making the platform valuable to buyers and, in turn, more valuable to sellers.²⁶

²⁵ Paul Belleflamme and Martin Peitz, *The Economics of Platforms*, Cambridge, UK, Cambridge University Press, 2021, p. 11 (“The reason why platforms are so prevalent nowadays is that the Internet and digital technologies have dramatically reduced a number of transaction costs, thereby facilitating a wide array of interactions.”).

²⁶ Akshita Sharma et al., “Relationship between customer satisfaction and loyalty,” *Social Science Research Network*, 2020, p. 9 (“Once the customer is satisfied they would return for repeat future purchases and

B. How StockX works and creates value

18. StockX is an online marketplace that makes it easier for buyers seeking to purchase items such as sneakers, apparel, luxury handbags, and electronics, and sellers offering these items to find each other and transact. Since its inception, StockX has been popular among sneaker collectors who use the platform to acquire high-end sneakers that are otherwise difficult to find or acquire.²⁷

19. StockX’s business model is based on digital technologies and features to reduce search, information, and transaction costs faced by both buyers and sellers. It was conceived by its founders as “the stock market of things,”²⁸ with a goal of bringing standardization and price transparency to trading in the sneaker resale market.²⁹ For example, as highlighted in its marketing material, StockX consolidates all information and trading options for a given product on a single product page, therefore reducing search costs for buyers relative to resale platforms with seller-specific listings for the same product.³⁰ The standardization also benefits sellers, who

eventually become loyal, and a loyal customer will always spread positive word of mouth which leads to increase in both sales and profitability as loyal customer will bring new customers to the firm.”); Andreas Lendle, Marcelo Olarreaga, Simon Schropp, and Pierre-Louis Vézina, “There Goes Gravity: eBay and the Death of Distance,” *The Economic Journal*, Vol. 126, No. 591, 2016, pp. 406-441, pp. 432-433 (“[W]e estimate a distance effect on trade flows that is about 65% smaller on eBay [relative to total trade data collected from national customs offices] ... this difference in distance effects is most-likely due to online technologies that reduce information frictions associated with geographic distance.”).

²⁷ Quartz, “StockX, a Sneaker Resale Site, Is Now Worth \$3.8 Billion,” April 9, 2021, <https://qz.com/1994596/stockx-a-sneaker-resale-site-is-now-worth-3-8-billion/> (“Today sneaker resale has exploded, in part due to the rise of shops and sites that have turned reselling limited-release sneakers into a large and lucrative business. The online leader in this category is StockX.”); Business Insider, “These Are The Most Popular Sneakers on Resale Sites - And How Much You Can Make For Each One,” August 13, 2021, <https://www.businessinsider.com/stockx-most-popular-sneakers-resale-sites-price-value-data-2021-8> (“Sneakerheads looking to score rare and exclusive heat turn to platforms like StockX which serves as a guiding light for original pricing, resale value, and price volatility.”).

²⁸ Jacob Gallagher, “This Website is the Stock Market for Nikes and Rolexes,” *The Wall Street Journal*, November 26, 2018, <https://www.wsj.com/articles/this-website-is-the-stock-market-for-nikes-and-rolexes-1543251772>.

²⁹ Jacob Gallagher, “This Website is the Stock Market for Nikes and Rolexes,” *The Wall Street Journal*, November 26, 2018, <https://www.wsj.com/articles/this-website-is-the-stock-market-for-nikes-and-rolexes-1543251772> (“What really bugged [Luber] was the absence of price standardization ... Mr. Luber envisioned a more orderly market, with a New York Stock Exchange-style ticker, that would make the value of a pair of sneakers transparent, in real time.”).

³⁰ StockX, “Buying,” <https://stockx.com/about/buying> ([audio] at 0:00 – 0:28 “Meet Andre. He really wants to cop a pair of one of his all-time favorite [sneakers] ... Andre goes to StockX.com where he finds the one page for the [sneakers] he’s looking for. Not browsing through thousands of listings like you know who. Because

do not need to spend time taking photos of the product and creating a customized listing.³¹ StockX also uses a bid or buy pricing mechanism in which sellers post asking prices and buyers may submit bids or buy from the lowest asking price.³² Each product page also provides historical price information for the product, which helps buyers not overpay and sellers not undersell.³³ These features, combined with StockX’s payment processing system allow buyers and sellers to find one another, agree on a price, and complete transactions in a seamless fashion.

20. StockX also relies on various features and technologies to increase trust and accountability between buyers and sellers on the platform. As described in Section V, these features and technologies include the platform’s verification process and inclusion of detailed pricing data on product pages. Together, these efforts have allowed StockX to overcome various drawbacks of the offline resale of high-end products and collectibles, such as the distances in time and space that make matching buyers and sellers more difficult.

21. Resale platforms such as StockX have been especially valuable for individuals who collect and trade collectibles—such as sneakers—by increasing overall interest and participation in the resale markets, including the rare sneaker market.³⁴

everything happens on this one page, Andre can quickly see the prices on every pair that’s ever been sold in every size in one convenient place.”).

³¹ StockX, “Selling,” <https://stockx.com/about/selling> (“Just search for your product and set your price. You won’t need to take product pictures, share personal information, or negotiate with potential Buyers.”).

³² StockX, “Buying,” <https://stockx.com/about/buying> (“Buy Now at the lowest Ask, or place a lower Bid at the price you want to pay. We will send you immediate updates as prices move on your Bids. Bids can be renewed or let go when they’re about to expire, and you’ll be notified ahead of time.”).

³³ Sneaker Jagers, “How StockX Became the Biggest Sneaker Marketplace,” September 30, 2021, <https://www.sneakerjagers.com/en/n/how-stockx-became-the-biggest-sneaker-marketplace/27074> (“When buying a sneaker, you can get insight into the rises and falls of the prices. In this way, the company remains transparent about the prices and you get insight into the market value of your pair.”).

³⁴ Complex, “The Rise of the Reseller,” November 20, 2019, <https://www.complex.com/sneakers/2019/11/rise-of-the-sneaker-reseller-in-the-2010s> (“No one understands the Wall Street-like nature of the sneaker aftermarket better than Josh Lubner ... He estimates that about 20,000 transactions take place on StockX each day, with the bulk of those being sneakers. Power sellers using the platform earn upwards of six figures a year; a handful even hit the million-dollar mark.”); Jacob Gallagher, “This Website is the Stock Market for Nikes and Rolexes,” *The Wall Street Journal*, November 26, 2018, <https://www.wsj.com/articles/this-website-is-the-stock-market-for-nikes-and-rolaxes-1543251772>.

V. **RESALE MARKETPLACES AND THE NEED TO CREATE AND MAINTAIN TRUST**

22. The success of resale marketplaces hinges on their ability to enable positive interactions between buyers and sellers and establish trust between both groups. Resale marketplaces that fail to cultivate positive interactions do so at the risk of their reputation and viability as a business. StockX, like other similar platforms, has an incentive to ensure trust on its platform, and would risk the success of its business if it did not take steps to prevent the sale of counterfeit items

A. **A primer on coring**

23. Because marketplaces are in the business of facilitating transactions, a key to their success is that the interactions that occur through them are positive for both buyers and sellers. Interactions that are negative for either side deter users from joining or continuing to use the platform.³⁵ Marketplaces are therefore incentivized to facilitate and manage the interactions between buyers and sellers—for instance, by reducing search, information, and transaction costs and encouraging good behavior on the platform—to ensure that buyers and sellers continue to use the platform. Platform economists use the term “coring” to refer to the ability of two-sided platforms, in general, and marketplaces, in particular, to actively manage and maintain buyer and seller interactions to ensure their quality.³⁶

24. To facilitate positive interactions and support coring, platforms rely on technology, processes, and policies aimed at improving quality and promoting trust in the performance and security of the platform.³⁷ Preventing or minimizing negative interactions in the

³⁵ Avi Goldfarb and Catherine Tucker, “Digital Economics,” *Journal of Economic Literature*, Vol. 57, No. 1, 2019, pp. 3-43, p. 26 (“The failure of the reputation systems hurts the platform, rather than the individual seller.”).

³⁶ Catherine Tucker, “How Platforms Create Value Through Coring and Implications for Market Definition,” *CPI Antitrust Chronicle*, Vol. 2, No. 2, 2022, pp. 16-19, p. 17 (“Platforms enable multiple distinct groups of users to interact with one another, and platform economists refer to the practice of actively managing these interactions to ensure they go well as ‘coring.’”).

³⁷ Catherine Tucker, “How Platforms Create Value Through Coring and Implications for Market Definition,” *CPI Antitrust Chronicle*, Vol. 2, No. 2, 2022, pp. 16-19, p. 17 (“A platform acts as a ‘core’ for these interactions by adopting technology, policies, and procedures that facilitate the interaction taking place, build trust in the interactions, and provide incentives for interactions to stay on the platform. This often requires transaction

short run increases user trust in the quality of interactions, and therefore helps platforms maximize the number of interactions in the long run, a necessary condition to their success. Examples of coring activities commonly used by platforms to improve and build user trust include screening protocols, such as background checks and identity verifications for users, and rating systems, which help users find high-quality matches while simultaneously incentivizing good behaviors. Platforms also may have mechanisms for users to report poor experiences on the platform or procedures to remove or restrict users who undermine the quality of interactions on the platform. Finally, some platforms offer dispute resolution services and protections for users, such as insurance.³⁸

B. Trust in online and resale marketplaces

1. Marketplaces that fail to establish or that lose trust risk their reputation and the viability of their platform

25. In an online marketplace, buyers and sellers that match on the platform typically do not know one another, may be entirely anonymous, and often have no means of inspecting the product they want to buy before the purchase. Both sides possess private information, such as the seller's knowledge of the quality of the good or service sold and the buyer's perception of that quality and their willingness to pay.³⁹ This informational asymmetry can make transactions risky. Buyers may be uncertain that they will receive their purchase and that it will be of the expected quality, while sellers may worry that they will not receive their payments on time or that they will have to deal with dishonest and difficult buyers. For instance, on platforms like eBay that do not make any effort to verify what the seller is sending to the buyer, buyers can be scammed by

platforms to establish governance mechanisms based on observable transactions that ensure successful interactions.”).

³⁸ See, for example, Airbnb, “Host Liability Insurance,” <https://www.airbnb.com/help/article/937>.

³⁹ Paul Belleflamme and Martin Peitz, *The Economics of Platforms*, Cambridge, UK, Cambridge University Press, 2021, pp. 124-125, p. 125 (“[A]symmetric information problems are common on platforms. It is indeed rare that users know one another before interacting on a platform. As a result, users may ignore many important aspects of their potential counterparts that are relevant for their valuation of the platform: What is their willingness to participate to the interaction? How will they behave during the interaction? Will they respect the terms of the transactions? And so on. These problems are particularly prominent on platforms that facilitate the trade of goods, as buyers typically have less information than sellers about the quality of the goods or services offered for sale (either because this information is hidden or because it is costly to search).”).

fraudsters selling empty boxes of PlayStation consoles.⁴⁰ Like other resale marketplaces, buyers on online resale marketplaces also face the risk of buying counterfeit or defective items, since they are not buying directly from the manufacturer or an authorized retailer.

26. If buyers and sellers stop trusting the platform, economic theory predicts that the marketplace can quickly unravel. Buyers, factoring in the uncertainty about the authenticity and quality of the purchase, will opt to pay less, while sellers of genuine items will leave the platform because they could not achieve a satisfactory price on the platform.⁴¹ Sellers may also leave after being scammed by buyers. This idea is expressed in *The Economics of Platforms* as follows:

[T]ransactions will take place on the platform only if users sufficiently trust one another. Otherwise, users will form pessimistic expectations about the participation of other users and it is then very likely that no users will actually participate ...⁴²

Marketplace unraveling due to a lack or loss of trust is exacerbated in the context of platforms, as network effects may accelerate the process in which buyers and sellers exit the platform in response to reputational loss.⁴³ Consider, as an illustrative example, an event that raises doubt over whether sellers on a platform can be trustworthy; for instance, a popular seller is exposed for selling counterfeit goods. Upon learning of this new information, many customers may stop trusting the platform and stop shopping on the platform, for fear that the goods sold by remaining sellers may also be counterfeits. As a result, remaining sellers will suffer a reputational externality, reducing their incentives to remain on the platform, and prospective sellers will be

⁴⁰ The Register, “Empty Playstation Box Sold for \$425,” February 2, 2001, https://www.theregister.com/2001/02/02/empty_playstation_box_sold (“Bidding started at \$9.99 for the item, described as a ‘PlayStation 2 Original Box And Receipt’, on December 27. Over the three day online auction the gaming collectables, item number 1204183251, received 39 bids. They were eventually snapped up by ‘arturofuentes 13’ for the bargain price of \$425 ... Tucked away in the comments on the Seller’s Feedback Profile she has written ‘Complaint: Buyer Beware!!! Misleading information about item. Paid \$425 for an empty box!’ To which the seller responded: ‘I sent what was promised in the auction. I do not rip people off. She’s a liar.’”).

⁴¹ George Akerlof, “The Market for ‘Lemons’: Quality Uncertainty and the Market Mechanism,” *The Quarterly Journal of Economics*, Vol. 84, No. 3, 1970, pp. 488-500.

⁴² Paul Belleflamme and Martin Peitz, *The Economics of Platforms*, Cambridge, UK, Cambridge University Press, 2021, pp. 124-125.

⁴³ Catherine Tucker, “How Platforms Create Value Through Coring and Implications for Market Definition,” *CPI Antitrust Chronicle*, Vol. 2, No. 2, 2022, pp. 16-19, p. 18 (“Diminished trust will erode the number of interactions on the platform as well as the number of sellers and buyers. This will in turn erode indirect network effects and leave the platform at a disadvantage relative to other, better-managed platform competitors.”).

dissuaded from joining. In particular, even “one poor outcome may cause a buyer to update [their] beliefs about the quality of all sellers on the platform, resulting in a reputational externality across sellers.”⁴⁴

27. Empirical studies confirm that lack or loss of trust can threaten platform success and, in some cases, cause complete unraveling. An empirical study of struggling or failed platforms cited the “failure to develop trust with users and partners” as one of the major mistakes made by platforms.⁴⁵ Platform economists therefore regard trust as a “vital building block” of platforms, noting that “a platform’s foremost responsibility is to establish a climate of trust among its participants.”⁴⁶ Trust is necessary for a platform to retain its users and is key to ensure the long-term success of the platform.⁴⁷

28. Craigslist is an example of an online platform whose trust issues have hindered its ability to grow. Craigslist uses few, if any, of the coring activities commonly used by the platforms described in Section V.A. The platform has no screening protocols or rating systems, and only provides external resources for consumers looking to avoid or report scams. It provides no recourse for users that fall victim to fraud or scams; rather, it directs them to file complaints through external organizations, such as the FTC.⁴⁸ The platform’s lack of trust-related infrastructure has led to numerous news stories detailing instances of scams and quality issues,

⁴⁴ Chris Nosko and Steven Tadelis, “The Limits of Reputation in Platform Markets: An Empirical Analysis and Field Experiment,” *NBER Working Paper 20830*, 2015, pp. 1-36, p. 1 (“[D]ecentralized sellers in platform markets do not internalize the impact of their actions on the marketplace as a whole. In particular, one poor outcome may cause a buyer to update his beliefs about the quality of *all* sellers on the platform, resulting in a *reputational externality* across sellers.”).

⁴⁵ David B. Yoffie, Annabelle Gawer, and Michael A. Cusumano, “A Study of More Than 250 Platforms Reveals Why Most Fail,” May 29, 2019, <https://hbr.org/2019/05/a-study-of-more-than-250-platforms-reveals-why-most-fail>.

⁴⁶ Paul Belleflamme and Nicolas Neysen, *Platform Strategies: A Guidebook for Entrepreneurs in the Platform Economy*, London, Routledge, 2023, p. 200.

⁴⁷ Paul Belleflamme and Nicolas Neysen, *Platform Strategies: A Guidebook for Entrepreneurs in the Platform Economy*, London, Routledge, 2023, pp. 199-200 (“You may be tempted to sit back and let positive feedback loops work their ‘snowballing magic’ for you. But – sorry to break the bad news – it is way too early to rest on your laurels Your next challenge is thus to consolidate your platform by retaining your users. This is key to ensuring the success of your platform in the long run”).

⁴⁸ Craigslist, “Avoiding Scams,” <https://www.craigslist.org/about/scams>.

sometimes resulting in real harm to users.⁴⁹ For instance, a person selling Air Jordans was pepper-sprayed and robbed by potential buyers met on Craigslist,⁵⁰ and another had their \$350 Nike sneakers stolen after a buyer met on Craigslist threatened them with gun violence during the exchange.⁵¹ These issues have inhibited the platform’s ability to maximize its potential to serve its users successfully.

29. The failure of eBay in China provides another example of the consequences of coring failures. When it entered the Chinese ecommerce market in the early 2000s, eBay benefited from a first-mover advantage and was dominant. However, it relied on PayPal to process payments at the point of purchase, immediately transferring funds from buyer to seller. Alibaba later entered the market with a payment model whereby seller payment was contingent

⁴⁹ Ellen Airhart, “Why cashier’s checks are part of so many online scams,” *Vox*, August 19, 2019, <https://www.vox.com/the-goods/2019/8/19/20808526/cashiers-checks-online-scams> (“‘I think cashier’s checks are being used in a growing number of schemes,’ says Tejasvi Srimushnam, staff attorney for the Federal Trade Commission’s Bureau of Consumer Protection. These scams are common on Craigslist and other online marketplaces, and the number of fake check complaints to the FTC and the Internet Fraud Complaint Center doubled between 2014 and 2017 from 12,781 to 29,513, according to a report by the Better Business Bureau.”); Patch, “Bellevue Police Warn of Craigslist Moving Company Scam,” March 30, 2022, <https://patch.com/washington/bellevue/bellevue-police-warn-craigslist-moving-company-scam> (“Bellevue police are warning of a scam targeting residents who seek out moving services on Craigslist. The police department said the latest scam has been reported around the Puget Sound area, with the culprits posing as a reputable moving company, complete with a business license, address and phone number. However, once the ‘movers’ arrive and load up the truck with valuables, police said they demand victims pay a ransom to return the items, quoting a price four to five times higher than the agreed-upon cost. In one such case, Bellevue investigators said a victim refused to pay and the scammers left with an estimated \$40,000 worth of belongings.”).

⁵⁰ Burbank Leader, “Craigslist Seller Robbed by Would-be Buyers in Burbank,” January 22, 2014, <https://www.latimes.com/socal/burbank-leader/the818now/tm-blr-me-craigslist-seller-robbed-by-wouldbe-buyers-in-burbank-20140122-story.html> (“When the victim opened his trunk to retrieve the Air Jordans, one suspect pepper-sprayed him in the face, while the other grabbed the show box. The pair struggled over the box, until the victim, who was having trouble seeing, let go[.]”).

⁵¹ KIRO7, “Craigslist Sneaker Sale Leads to Robbery at Northgate,” August 20, 2013, <https://www.kiro7.com/news/craigslist-sneaker-sale-leads-robbery-northgate/246518365> (“Hong ran after the man who had grabbed his shoes, but backed-off immediately when, according to police documents, the suspect said he ‘had a gun and will shoot him if he follows.’ Hong immediately called the Seattle police and a case was opened. Even though he’s sold at least 10 pairs of sneakers on Craigslist, Hong probably won’t do it again.”). See also CNN, “Craigslist Case: Teen Robbery Suspect Run Over, Loses Arm,” February 13, 2016, <https://www.cnn.com/2016/02/13/us/new-york-craigslist-robbery/index.html>; ABC30, “\$6,000 Pharrell x Adidas Sneakers Stolen From Irvine Man who Listed Them on Craigslist,” November 18, 2017, <https://abc30.com/pharrell-adidas-you-nerd-sneakers-stolen-irvine-shoes/2667604> (“A search is on for two thieves who stole a pair of limited edition Adidas sneakers worth \$6,000 from an Irvine man who was trying to sell them on Craigslist ... the victim and the suspect met on Tuesday at the Irvine Market ... When the victim entered the backseat of the suspect’s white BMW 3 Series, he was met by a second suspect, who produced a black semi-automatic handgun and pointed it at him. Investigators said the victim was ordered to get out of the car – and to leave the shoes behind. The suspects took off with the shoes as well as the victim’s cellphone.”).

on buyer satisfaction. This model was perceived as more trustworthy by Chinese consumers, many of whom promptly switched over to the new platform.⁵² Ultimately, eBay did not survive competition from Alibaba due to these trust issues and exited the market in 2006.⁵³

30. Coring failures also contributed to the downfalls of Friendster and Myspace, two early social media platforms. Friendster was launched in 2002 as a platform to introduce friends-of-friends for dating purposes and quickly amassed 300,000 users.⁵⁴ However, the platform failed due, in part, to changes to site features and functionality which, “signaled to some that the company did not share users’ interests” and created a “rupture of trust between users and the site.”⁵⁵ When Myspace launched in 2003, it offered users greater autonomy and flexibility in

⁵² David B. Yoffie, Annabelle Gawer, and Michael A. Cusumano, “A Study of More Than 250 Platforms Reveals Why Most Fail,” *Harvard Business Review*, May 29, 2019, <https://hbr.org/2019/05/a-study-of-more-than-250-platforms-reveals-why-most-fail> (“One of the biggest failures in this category was eBay in China. eBay was the first mover, with a dominant share in China in the early 2000s. But Alibaba took over the market. The biggest source of the failure, confided the CEO of eBay China in an interview, was that ‘eBay’s single biggest problem... was trust.’ eBay relied on PayPal, which was designed as a payment system, much like a bank. For Chinese consumers unfamiliar with ecommerce, that was not enough. Alibaba’s Alipay used an escrow model (which did not release payment until the consumer was satisfied). This neutralized eBay’s early mover advantage, and Alibaba quickly captured the bulk of the market.”).

⁵³ Helen Wang, “How EBay Failed in China,” *Forbes*, September 12, 2010, <https://www.forbes.com/sites/china/2010/09/12/how-ebay-failed-in-china> (“By March 2006, [Alibaba’s] Taobao had outpaced eBay EachNet and became the leader in China’s consumer-to-consumer (C2C) market, with 67 percent market share in terms of users, while eBay EachNet had only 29 percent market share. ‘The competition is over,’ Ma exclaimed. ‘It’s time to claim the battlefield.’ On December 20, 2006, Meg Whitman, eBay’s then CEO, flew to Shanghai to take part in a press conference to announce a new joint venture ... It was, in reality, a formal announcement of eBay’s withdrawal from the online auction market in China.”).

⁵⁴ danah boyd and Nicole Ellison, “Social Network Sites: Definition, History, and Scholarship,” *Journal of Computer-Mediated Communication*, Vol. 13, No. 1, 2008, pp. 210-230, p. 215 (“Friendster launched in 2002 as a social complement to Ryze ... While most dating sites focused on introducing people to strangers with similar interests, Friendster was designed to help friends-of-friends meet, based on the assumption that friends-of-friends would make better romantic partners than would strangers (J. Abrams, personal communication, March 27, 2003). Friendster gained traction among three groups of early adopters who shaped the site—bloggers, attendees of the Burning Man arts festival, and gay men (boyd, 2004)—and grew to 300,000 users through word of mouth before traditional press coverage began in May 2003 (O’Shea, 2003).”).

⁵⁵ danah boyd and Nicole Ellison, “Social Network Sites: Definition, History, and Scholarship,” *Journal of Computer-Mediated Communication*, Vol. 13, No. 1, 2008, pp. 210-230, p. 215 (“As Friendster’s popularity surged, the site encountered technical and social difficulties (boyd, 2006b). Friendster’s servers and databases were ill-equipped to handle its rapid growth, and the site faltered regularly, frustrating users who replaced email with Friendster”), p. 216 (“The initial design of Friendster restricted users from viewing profiles of people who were more than four degrees away (friends-of-friends-of-friends-of-friends). In order to view additional profiles, users began adding acquaintances and interesting-looking strangers to expand their reach. Some began massively collecting Friends, an activity that was implicitly encouraged through a ‘most popular’ feature. The ultimate collectors were fake profiles representing iconic fictional characters: celebrities, concepts, and other such entities. These ‘Fakesters’ outraged the company, who banished fake profiles and eliminated the ‘most popular’ feature (boyd, in press-b). While few people actually created Fakesters, many more enjoyed surfing

designing their profiles, attracting former users of Friendster and a new, younger demographic that had never used Friendster.⁵⁶ However, Myspace’s laissez-faire environment was associated with safety issues,⁵⁷ and Facebook took over as the most popular social networking platform in 2008.⁵⁸ Facebook’s success has been credited to better coring practices, particularly in its early years:

Facebook started as a Harvard-only network, then expanded gradually, in stages, to other universities, high-schools, and corporate users, requiring a verified email address. This—and its clean and non-customizable design—allowed it to establish a reputation as a “safe space,” in contrast to MySpace.⁵⁹

31. More recently, the “Blue Check Confusion” that arose when Twitter made changes to its account verification process provides an example of how coring affects platform users.⁶⁰ Back in 2009, Twitter launched its verified badge system, the blue check mark, to limit

Fakesters for entertainment or using functional Fakesters (e.g., ‘Brown University’) to find people they knew. The active deletion of Fakesters (and genuine users who chose non-realistic photos) signaled to some that the company did not share users’ interests. Many early adopters left because of the combination of technical difficulties, social collisions, and a rupture of trust between users and the site (boyd, 2006b).”); Productmint, “What Happened to Friendster? 4 Reasons Why it Failed,” <https://productmint.com/what-happened-to-friendster/> (“Friendster failed because of site performance issues, rising competition, executive turnover, and due to extensive content moderation.”).

⁵⁶ danah boyd and Nicole Ellison, “Social Network Sites: Definition, History, and Scholarship,” *Journal of Computer-Mediated Communication*, Vol. 13, No. 1, 2008, pp. 210-230, p. 217 (“MySpace was able to grow rapidly by capitalizing on Friendster’s alienation of its early adopters ... Teenagers began joining MySpace en masse in 2004. Unlike older users, most teens were never on Friendster—some joined because they wanted to connect with their favorite bands; others were introduced to the site through older family members.”).

⁵⁷ danah boyd and Nicole Ellison, “Social Network Sites: Definition, History, and Scholarship,” *Journal of Computer-Mediated Communication*, Vol. 13, No. 1, 2008, pp. 210-230, p. 217 (“[After July 2005], safety issues plagued MySpace. The site was implicated in a series of sexual interactions between adults and minors, prompting legal action (Consumer Affairs, 2006). A moral panic concerning sexual predators quickly spread (Bahney, 2006), although research suggests that the concerns were exaggerated.”).

⁵⁸ Gil Press, “Why Facebook Triumphed Over All Other Social Networks,” *Forbes*, April 8, 2018, <https://www.forbes.com/sites/gilpress/2018/04/08/why-facebook-triumphed-over-all-other-social-networks/> (“In April 2008, MySpace was overtaken by Facebook in terms of the number of unique worldwide visitors, and in May 2009, in the number of unique U.S. visitors. Why did Facebook become the largest and most dominant player in the social networking market?”).

⁵⁹ Gil Press, “Why Facebook Triumphed Over All Other Social Networks,” *Forbes*, April 8, 2018, <https://www.forbes.com/sites/gilpress/2018/04/08/why-facebook-triumphed-over-all-other-social-networks/>.

⁶⁰ Rachel Lerman and Faiz Siddiqui, “Twitter’s Blue Check Mark was Loved and Loathed. Now it’s Pay for Play,” *The Washington Post*, March 31, 2023, <https://www.washingtonpost.com/technology/2023/03/31/twitter-verification-checkmark-ending/> (“Twitter has been in a state of upheaval since Musk, who is also the CEO of Tesla and SpaceX, purchased the site he uses to communicate with his roughly 133 million followers on the

accounts impersonating celebrities, among others. Twitter would verify the identity of the account user before giving them a badge, meaning that Twitter users could trust that Twitter had taken steps to ensure it considered the account to be legitimate.⁶¹ In 2022, Twitter made the check mark subject to a monthly fee, and gave the badge to anyone willing to pay the fee without verifying their identity. As a result, accounts were set up that attempted to impersonate others, leading to the rollback of the program.⁶² In December 2022, Twitter relaunched its paid verification program, with the additional requirement for users to register a phone number with Twitter to combat impersonations.⁶³ Until recently, paid verification existed alongside legacy blue check marks; that is, accounts that received a blue check for achieving a certain notoriety on the platform. However, in April 2023, Twitter began removing legacy check marks, affecting celebrities, politicians, news platforms, and other high-profile users.⁶⁴ Immediately, news outlets reported on “Twitter descend[ing] into chaos as news outlets and brands lose verification,” and “concerns that Twitter could lose its status as a platform for getting accurate, up-to-date information from authentic sources” as the verification check “lost all meaning.”⁶⁵

site. The self-described ‘free speech absolutist’ has said he wants to promote ‘free speech’ and further Twitter’s role as a public town square.”); Madison Malone Kircher, “Blue Check Confusion,” *The New York Times*, April 30, 2023, <https://www.nytimes.com/2023/04/30/briefing/twitter.html> (“Twitter’s check mark system wasn’t perfect, but it did make it easier for users to figure out if tweets were coming from a real person or organization ... Now users will have to work harder to make sure people are who they purport to be. I can attest that it’s harder than it sounds.”).

⁶¹ Emma Bowman and Raquel Maria Dillon, “Twitter Begins Advertising a Paid Verification Plan for \$8 per Month,” *NPR*, November 6, 2022, <https://www.npr.org/2022/11/05/1134561542/twitter-blue-check-paid-verification-elon-musk> (“Since 2009, blue-checked accounts had been distributed to users through a verification process as a way to separate authentic accounts from impersonators.”).

⁶² NBC News, “Twitter Pulls Paid Verification After Impersonators Flourish,” November 11, 2022, <https://www.nbcnews.com/tech/crypto/twitters-subscription-service-not-available-impersonators-flourish-rcna56730> (“Twitter has suspended sign-ups for its Blue subscription service after the initial rollout was marred by users who received a paid verification badge and then impersonated celebrities, politicians, and brands.”).

⁶³ Siladitya Ray, “Twitter Blue Subscription Service Relaunches Monday – Here’s Everything You Need to Know,” *Forbes*, December 11, 2022, <https://www.forbes.com/sites/siladityaray/2022/12/11/twitter-blue-finally-relaunches-on-monday-here-is-everything-you-need-to-know> (“Subscribers will need to register their phone number with Twitter in order to receive a blue verified badge, part of an effort to combat impersonator accounts that plagued the original rollout of Twitter Blue.”).

⁶⁴ CBS News, “Twitter Starts Removing Blue Check Marks From Users who Don’t Pay,” April 20, 2023, <https://www.cbsnews.com/news/twitter-blue-check-mark-removes-from-users-who-dont-pay> (“Twitter had about 300,000 verified users under the original blue-check system – many of them journalists, athletes, and public figures. The checks began disappearing from these users’ profiles late morning Pacific Time.”).

⁶⁵ CNN, “Twitter Descends into Chaos as News Outlets and Brands Lose Verification,” April 21, 2023, <https://www.cnn.com/2023/04/21/tech/twitter-verification-chaos/index.html> (“Twitter users awoke Friday

32. These examples underscore that StockX, like other similar platforms, has an incentive to ensure trust on its platform. StockX would risk the success of its business if it meaningfully tolerated sale of counterfeit items, which could lead to an erosion of trust on its platform.

2. *Successful marketplaces invest considerable resources in building and maintaining trust*

33. Building and maintaining trust is, and has been, important for the success of many marketplaces, and successful marketplaces devote considerable resources to coring. To stay effective, coring efforts may evolve over time as platforms learn about what strategies are most effective and also as new technologies emerge, which can aid these efforts. Coring efforts are a key way that firms compete in a competitive environment.⁶⁶ As illustrated by the following examples, specific policies and procedures used to build trust vary across marketplaces, depending on the marketplace characteristics and associated challenges, and evolve.

a. *Christie’s and Sotheby’s*

34. Two examples of successful marketplaces that devote resources to coring are Christie’s and Sotheby’s, leading auction houses founded in the 18th century that sell art, luxury

morning to even more chaos on the platform than they had become accustomed to in recent months under CEO Elon Musk after a wide-ranging rollback of blue check marks from celebrities, journalists and government agencies. The end of traditional verification marked the beginning of a radically different information regime on Twitter, one highlighted by almost immediate impersonations of government accounts; the removal of labels previously used to identify Chinese and Russian propaganda; and a scramble by the company to individually re-verify certain high-profile figures such as Pope Francis.”); Kari Paul, “Fake Accounts, Chaos and Few Sign-Ups: the First Day of Twitter Blue was Messy,” *The Guardian*, April 22, 2023, <https://www.theguardian.com/technology/2023/apr/21/elon-musk-twitter-blue-rollout>, (“The change has shifted the meaning of the check from an account that has been independently verified to one that paid a premium to help their tweets be seen by more people. ... Many took advantage of the new verification-free world on Twitter by changing their profile pictures and names to impersonate prominent figures, from Amazon CEO Jeff Bezos to the late Arizona Senator, John McCain. Others made prank tweets posing as legitimate news accounts to spread misinformation making fun of Musk. The ability to pose as legitimate organizations and figures raised concerns that Twitter could lose its status as a platform for getting accurate, up-to-date information from authentic sources, including in emergencies.”).

⁶⁶ Catherine Tucker, “How Platforms Create Value Through Coring and Implications for Market Definition,” *CPI Antitrust Chronicle*, Vol. 2, No. 2, 2022, pp. 16-19, p. 18 (“Coring needs evolve as platforms compete, learn about what works, observe their competitors, and monitor evolving interactions on their platform. Continuous coring is particularly critical when a platform is facing competition.”).

items, and collectibles such as sneakers in live auctions and online.⁶⁷ Both auction houses invest in rigorous screening protocols to maximize the chances of identifying counterfeit items. They rely on a team of in-house specialists tasked with authenticating items and offer multi-year warranties to further assuage concerns about authenticity.⁶⁸ Sotheby's also has invested in authentication technology to detect high-level art forgeries. In 2016, it acquired Orion Analytical—a materials analysis firm specializing in the identification of forged artwork based on scientific techniques such as analytical chemistry, among others—and appointed its founder to lead a new Department of Science Research.⁶⁹ While these efforts are costly and sometimes

⁶⁷ Christie's, "About Us," <https://www.christies.com/about-us/welcome-to-christies#About-UsAbout-Us> ("Founded in 1766, Christie's is a world-leading art and luxury business. Renowned and trusted for its expert live and online auctions, as well as its bespoke private sales, Christie's offers a full portfolio of global services to its clients, including art appraisal, art financing, international real estate and education."); Sotheby's, "The History of Sotheby's Auction House," <https://www.sothebys.com/en/about/our-history> ("Founded in 1744, Sotheby's is the oldest and largest internationally recognized firm of fine art auctioneers in the world."); Christie's, "Handbags x HYPE: The Luxury Remix," November 22, 2021, <https://www.christies.com/about-us/press-archive/details?PressReleaseID=10304&lid=1> ("Christie's New York presents Handbags x HYPE: The Luxury Remix, a curated auction that reformulates our understanding of luxury today. ... Leading the sale, we are proud to offer one of the most collectible pair of sneakers to ever come to market: a pair of game-worn and dual signed Air Jordan XIIs (\$300,000-500,000), from Michael Jordan's last regular season game of the Chicago Bulls' championship season."); Sotheby's, "The Dynasty Collection: The Complete Set of Michael Jordan's 'Air Jordan' Six Championship Sneakers," February 27, 2023, <https://www.sothebys.com/en/articles/the-dynasty-collection-the-complete-set-of-michael-jordans-air-jordan-six-championship-sneakers> ("Sotheby's is proud to present *The Dynasty Collection*, a set of 6 individual Air Jordan sneakers – each one worn by Michael Jordan in the clinching games of his 6 career NBA championships.").

⁶⁸ Christie's, "Buying at Christie's," <https://www.christies.com/buying-services/buying-guide> ("Every item we sell is meticulously researched by our world-class specialists, so when the sale approaches, you can bid confidently ... Our specialists evaluate each item to ensure objects purchased through Christie's are authentic."); Christie's, "Terms & Conditions," <https://onlineonly.christies.com/terms-and-conditions/39> ("Subject to the terms and conditions of this paragraph, Christie's warrants for a period of five years from the date of the auction that any property described in headings printed in UPPER CASE TYPE (i.e. headings having all capital-letter type) in the lot description (as such description may be amended by any saleroom notice or announcement) which is stated without qualification to be the work of a named author or authorship, is authentic and not a forgery."); Sotheby's, "Why buy with Sotheby's," September 29, 2022, <https://help.sothebys.com/en/support/solutions/articles/44002297454-why-buy-with-sotheby-s-> ("Our reputation for trust and authenticity is backed by our unparalleled global network of specialists spanning 40 countries and 44 departments."); Sotheby's, "Conditions of business for buyers for New York sales," March, 2023, <https://www.sothebys.com/en/docs/pdf/conditions-of-business-for-buyers-for-new-york-sales-372023.pdf> ("We, as principal, provide an Authenticity Guarantee to the Buyer, subject to the following terms and conditions, that the Lot is not a 'counterfeit.'").

⁶⁹ CB Insights, "Orion Analytical," <https://www.cbinsights.com/company/orion-analytical> ("Orion Analytical is a materials analysis and consulting firm that analyzes the chemical and structural composition of disputed artworks for clients around the world, including private collectors, museums, galleries, and the FBI."); The Analytical Scientist, "Bringing Light to the Darkness," August 11, 2017, <https://theanalyticalscientist.com/techniques-tools/bringing-light-to-the-darkness> ("This systematic use of particle, elemental, and molecular analyses provides information on different physical, optical, and chemical

imperfect, they nonetheless contribute to the auction houses’ trustworthy reputations and help buyers to feel confident spending millions of dollars for coveted art and luxury items.⁷⁰ The two auction houses occupy the top spots in multiple rankings of art auction houses worldwide, and, in 2022, brought in sales of \$8 billion each, over 4 times the sales of their largest competitor.⁷¹

b. eBay

35. Another example is eBay, which has invested in, and iterated on, several trust-building measures throughout its history. One such measure is the platform’s rating system. Rating systems can be useful in online marketplaces, as they allow users to draw on the collective experience of others in making judgments about a particular user rather than rely on

features of materials. Used in combination, these analyses allow [Orion] to identify hundreds of thousands of materials, from an ancient pigment or alloy, to natural fibers, to modern synthetic polymers.”); Sotheby’s, “A Year of Scientific Research at Sotheby’s,” December 4, 2017, <https://www.sothebys.com/en/articles/a-year-of-scientific-research-at-sothebys> (“One year ago, Sotheby’s acquired Orion Analytical, the leading materials analysis and consulting firm in the art world, and hired its founder, Jamie Martin, to establish a Department of Scientific Research.”).

⁷⁰ Dalya Alberge, “Christie’s Caught up as £30m Forgeries Send Shock Waves Through the Art World,” *The Guardian*, October 16, 2010, <https://www.theguardian.com/artanddesign/2010/oct/17/christies-forger-art-scam>; Tom Sykes, “How Sotheby’s Got Hoodwinked: The Art World’s \$20m Forgery Scandal,” *The Daily Beast*, April 13, 2017, <https://www.thedailybeast.com/how-sothebys-got-hoodwinked-the-art-worlds-dollar20m-forgery-scandal> (“Sotheby’s, one of the two grand old firms of the global art world, and a key presence at Frieze, was forced into a humiliating admission that it is at the center of a multimillion-pound forgery scandal, involving what could be tens of millions of dollars worth of bogus Old Master paintings.”); Artistcloseup.com, “The Top 5 Art Auction Houses: A Guide to the World’s Most Prestigious Auctions,” March 1, 2023, <https://www.artistcloseup.com/blog/the-top-5-art-auction-houses> (“[Christie’s] has a reputation for selling the most valuable and prestigious artworks, including the recent sale of the Leonardo da Vinci painting, *Salvator Mundi*, for a record-breaking \$450 million ... [Sotheby’s] has a reputation for high-end sales, such as the recent auction of the 1933 Saint Gaudens Double Eagle coin for \$18.9 million.”).

⁷¹ Artistcloseup.com, “The Top 5 Art Auction Houses: A Guide to the World’s Most Prestigious Auctions,” March 1, 2023, <https://www.artistcloseup.com/blog/the-top-5-art-auction-houses> (“There are numerous art auction houses across the globe, but the top 5 are Christie’s, Sotheby’s, Phillips, Bonhams, and Heritage Auctions.”); The Collector, “Top 5 Auction Houses in the World,” August 8, 2019, <https://www.thecollector.com/top-5-auction-houses-in-the-world>; Robb Report, “The Big 3 Auction Houses Brought in Nearly \$18 Billion in Sales This Year,” December 27, 2022, <https://robbreport.com/lifestyle/news/auction-houses-2022-sales-1234789287> (“In 2022, Christie’s brought in \$8.4 billion in sales, while Sotheby’s reached \$8 billion and Phillips made \$1.3 billion.”); Statista, “Leading Auction Houses Worldwide in 2022, by Sales Value,” <https://www.statista.com/statistics/1285570/leading-auction-houses-worldwide-by-sales-value> (“That year, the company’s total sales from public and private channels amounted to roughly 8.4 billion U.S. dollars. Sotheby’s had the second-highest sales value that year, at around eight billion U.S. dollars. Other major auction houses, such as Heritage Auctions, Phillips, and Bonhams, reported less than 1.5 billion U.S. dollars in sales in 2022.”).

their own, more limited, experience alone.⁷² Shortly after launching in 1995, eBay introduced a rating system, which allowed users to provide feedback on any user regardless of whether they had sold or purchased from each other.⁷³ Since then, the platform has made improvements to its rating system to address issues related to unfair bias in feedback and retaliation against buyers leaving negative reviews. In 2000, eBay switched to a transaction-based feedback model and, in 2007, eBay introduced anonymous “Detailed Seller Ratings”—which are published only in aggregate form—to accompany classic and identifiable ratings for sellers.⁷⁴ Today, users of the platform have feedback profiles, which include an overall feedback score, the share of the user’s ratings that are positive, and recent written feedback.⁷⁵ In addition to leaving feedback, users also have the option to report especially poor behavior through a separate reporting system.⁷⁶ Sellers who fail to meet minimum performance standards risk limitations and, in extreme cases, bans on

⁷² Paul Belleflamme and Martin Peitz, *The Economics of Platforms*, Cambridge, UK, Cambridge University Press, 2021, p. 48 (“The key issue here is trust: Should buyers trust the quality claims that sellers make about their products and services on offer? In a bilateral relationship between buyers and sellers, such trust problems can be solved through repeated interaction. But in anonymous markets, alternative solutions need to be found. Rating and review systems (or “reputation systems”) provide such an alternative: They serve as a substitute for personal experience by letting individual buyers draw on the collective experience of other buyers.”).

⁷³ Tobias J. Klein, Christian Lambertz, and Konrad O. Stahl, “Market Transparency, Adverse Selection, and Moral Hazard,” *Journal of Political Economy*, Vol. 124, No. 6, 2016, pp. 1677-1713, p. 1681 (“In February 1996, just a few months after the first auction had taken place on its website, eBay introduced its feedback mechanism. In its earliest form, the system allowed any eBay user to leave feedback on the performance of any other user independently of any transaction, in the form of a ‘positive,’ ‘neutral,’ or ‘negative’ rating, possibly accompanied by a textual comment. This feedback was immediately observable on his or her feedback profile page, together with all ratings and comments that a user had ever received by other users.”).

⁷⁴ Tobias J. Klein, Christian Lambertz, and Konrad O. Stahl, “Market Transparency, Adverse Selection, and Moral Hazard,” *Journal of Political Economy*, Vol. 124, No. 6, 2016, pp. 1677-1713, pp. 1681-1682 (“In May 2007, eBay introduced a new form of unilateral buyer ratings: detailed seller ratings (DSRs). In addition to the original bilateral rating, buyers could now separately rate, with one to five stars, the accuracy of the item description, communication, shipping speed, and shipping charges. They are made anonymous by being published in aggregate form only, provided that at least 10 ratings have been left in the last 12 months, so that the seller cannot identify the individual rating.”).

⁷⁵ eBay, “Feedback profiles,” <https://www.ebay.com/help/account/changing-account-settings/feedback-profiles?id=4204> (“On the feedback profile page, you’ll see a member’s: Overall feedback score[:] Percentage of positive ratings[:] Recently received feedback[:] Detailed seller ratings[:] eBay registration date.”).

⁷⁶ eBay, “Report an Issue With a Buyer,” <https://www.ebay.com/help/selling/resolving-buyer-issues/reporting-issue-buyer?id=4084> (“If you’re having a problem with a buyer because they’re not following our rules, let us know and we’ll look into it.”); eBay, “Report an Issue With a Seller,” <https://www.ebay.com/help/buying/resolving-issues-sellers/reporting-item-issue-seller?id=4022> (“If you have a problem with a seller because they’re not following our policies, let us know and we’ll look into it.”).

their activity.⁷⁷ Similarly, buyers engaged in misconduct may be banned by individual sellers or suspended from eBay as part of eBay’s “Abusive Buyer Policy.”⁷⁸ As described on its website, eBay sees the feedback process as allowing users of the platform to “buy and sell with confidence.”⁷⁹

36. However, the informativeness of ratings is limited by several factors. First, ratings can be noisy. Noisy ratings may arise when buyers cannot easily judge the quality of their purchase, when buyers misunderstand the review process and provide irrelevant information,⁸⁰ or when buyers have idiosyncratic tastes and experiences. While such issues are mitigated by larger numbers of reviews, providing feedback is costly in terms of time and effort. It therefore takes considerable time to build a reputation. Furthermore, when providing feedback is optional—as is the case on eBay—ratings will only reflect the experience of a select sample of respondents. Indeed, research has shown that seller ratings on eBay are positively skewed and do not reflect the full spectrum of buyer experience.⁸¹ Research has found that ratings for hosts and guests on

⁷⁷ eBay, “Seller standards policy,” <https://www.ebay.com/help/policies/selling-policies/seller-standards-policy?id=4347> (“If your account has been evaluated as Below Standard for more than 2 consecutive months: We may downgrade your Store to the Basic level ... We may place selling restrictions on your account and related accounts, or restrict you from registering a new account ... In addition to the above, we may take action at any time if we have urgent concerns about your account; for example, if we’ve detected fraud or if your selling practices pose a threat to the buyer experience. The actions we take will be proportional to the nature of the issue we have identified and what is reasonably required to protect the interests of all eBay users and eBay as provider of the services.”)

⁷⁸ eBay, “Blocking a Buyer on eBay,” <https://www.ebay.com/help/selling/resolving-buyer-issues/blocking-buyer-ebay?id=4082> (“eBay sellers have control over who can bid on and buy their items. You can block individual buyers or set buyer requirements based on specific criteria.”); eBay, “Abusive Buyer Policy,” <https://www.ebay.com/help/policies/rules-policies-buyers/abusive-buyer-policy?id=4374> (“Activity that doesn’t follow eBay policy could result in a range of actions including for example: administratively ending or canceling listings, hiding or demoting all listings from search results, lowering seller rating, buying or selling restrictions, and account suspension.”).

⁷⁹ eBay, “Feedback profiles,” <https://www.ebay.com/help/account/changing-account-settings/feedback-profiles?id=4204>.

⁸⁰ Paul Belleflamme and Martin Peitz, *The Economics of Platforms*, Cambridge, UK, Cambridge University Press, 2021, p. 54 (“[T]his applies to product ratings on Amazon. Here, some reviewers do not base their rating on the quality and characteristics of the product they bought but on such factors as Amazon’s delivery service, which can be considered orthogonal to the product sold by Amazon.”).

⁸¹ Chris Nosko and Steven Tadelis, “The Limits of Reputation in Platform Markets: An Empirical Analysis and Field Experiment,” *NBER Working Paper 20830*, 2015, pp. 1-36 p. 9 (“[T]he median seller has a score of 100%. This could be indicative of a reputation system that works extremely well – bad sellers exit when their score falls even slightly, leading to a high positive selection. Unfortunately, this is not the case. Out of over 44 million transactions completed in October of 2011 on eBay’s U.S. marketplace, only 0.39% had negative feedback, while at the same time, over 1% had an actual dispute ticket opened, a step that takes substantially

Airbnb are similarly positively skewed, with some guests submitting high ratings even for hosts for whom they separately indicated not recommending.⁸² Ratings may also be distorted by seller manipulation. For instance, Fakespot, a fraudulent review detection service, found that 42% of the 720 million Amazon reviews written in 2020 were not genuine.⁸³ Review brokers offer sham reviews and download services to app developers looking to boost their visibility in the Apple and Google app stores.⁸⁴ The harm of fake positive reviews can be exacerbated by herding behavior, in which positive fake reviews attract disproportionately more positive reviews and negative experiences go unreported.⁸⁵

37. Recognizing the shortcomings of ratings and review systems, eBay has instituted several other practices to build trust on the platform. For example, eBay scans and analyzes the contents of messages for evidence of fraudulent activity.⁸⁶ In 2017, eBay moved to provide authentication services for luxury items, citing the desire “to boost customer confidence in

more effort on a buyer’s part than leaving negative feedback. Furthermore, over 3.3% of messages from buyers to sellers post the transaction include language that imply a bad buyer experience ... This indicates that there are a substantial number of transactions that went badly for which negative feedback was not left.”).

⁸² Andrey Fradkin, Elena Grewal, David Holtz, and Matthew Pearson, “Bias and Reciprocity in Online Reviews: Evidence From Field Experiments on Airbnb” presented at EC ’15: Proceedings of the Sixteenth ACM Conference on Economics and Computation (Cambridge, MA, July 15, 2015) p. 8 (“As expected, the distribution of ratings for guests who do not recommend is lower than the distribution of ratings for those that do recommend. However, in over 20% of cases where the guest does not recommend the host, the guest submits a four or five star rating.”).

⁸³ Matt Stieb, “Amazon’s War on Fake Reviews,” *Intelligencer*, July 26, 2022, <https://nymag.com/intelligencer/2022/07/amazon-fake-reviews-can-they-be-stopped.html> (“According to the fraudulent-review-detection service Fakespot, around 42 percent of 720 million Amazon reviews assessed in 2020 were bogus.”).

⁸⁴ Yahoo!Finance, “Revealed: Apple App store and Google Play flooded with fake reviews,” March 8, 2023, <https://uk.finance.yahoo.com/news/apple-app-store-google-play-flooded-with-fake-reviews-000126788.html> (“Review broker services for apps offer bulk downloads, reviews or upvotes to help push apps up the rankings ... One fake review broker site, reviewlancer, claims to have sold nearly 53,000 reviews and exchanged more than 130,000 reviews between apps.”).

⁸⁵ Paul Belleflamme and Martin Peitz, *The Economics of Platforms*, Cambridge, UK, Cambridge University Press, 2021, p. 59 (“[P]aid-for fake positive reviews can generate positive herding on B2C and C2C platforms. Thus, the damage done from a positive fake review would not be corrected if the fake report were not removed immediately but at some later time”).

⁸⁶ eBay, “User Agreement,” www.ebay.com/help/policies/member-behaviour-policies/user-agreement?id=4259#4 (“eBay’s automated systems scan and analyze the contents of every message sent through its messages platform, including messages between users, to detect and prevent fraudulent activity or violations of eBay’s User Agreement, including the incorporated terms, notices, rules, and policies. This may result in a manual review of messages sent through our messaging tools. This scanning and analysis may occur before, during, or after the message is sent, or while in storage, and may result in your message being delayed or withheld. eBay may store message contents, including to conduct this scanning and analysis.”).

selling and shopping for an amazing selection of designer merchandise.”⁸⁷ The authentication services started with handbags, but have since expanded to include sneakers, jewelry, watches, and trading cards. With eBay’s “Authenticity Guarantee,” qualifying items are verified by eBay’s in-house team of experts before being shipped to the buyer.⁸⁸ The “Authenticity Guarantee” is now a key piece of eBay’s trust-building efforts, as illustrated by eBay’s promotion of the service through a 30-second ad spot in December 2022.⁸⁹ Nearly all purchases on eBay, including but not limited to purchases of luxury items, are also protected by eBay’s “Money Back Guarantee” policy.⁹⁰ Under this policy, buyers who receive a product inferior to what was advertised—such as a box filled with stones in lieu of a plasma TV—are entitled to a refund upon return of the product, regardless of whether the seller offers returns.⁹¹

c. StockX

38. Resale marketplaces for rare sneakers and other luxury items, including StockX and its competitors, have similarly recognized the importance of building trust and therefore have instituted verification processes for the products sold on their platforms. This section

⁸⁷ PRNewswire, “Launch of eBay Authenticate Boosts Shopper Confidence for Luxury Handbag Purchases,” October 16, 2017, <https://www.prnewswire.com/news-releases/launch-of-ebay-authenticate-boosts-shopper-confidence-for-luxury-handbag-purchases-300536921.html>

⁸⁸ eBay, “Authenticity Guarantee,” <https://pages.ebay.com/authenticity-guarantee> (“Our team of authenticators brings years of industry knowledge to verifying your purchase ... Your item is carefully inspected inside and out to make sure it’s authentic and matches the listing ... Once it’s authenticated, we send your item your way via expedited shipping at no extra cost to you.”).

⁸⁹ The Drum, “US Ad of the Day: eBay Rejects Fake Followers & Fake News in Favor of Real Luxury Goods,” December 19, 2022, <https://www.thedrum.com/news/2022/12/19/us-ad-the-day-ebay-rejects-fake-followers-fake-news-favor-real-luxury-goods>.

⁹⁰ eBay, “eBay Money Back Guarantee policy,” <https://www.ebay.com/help/policies/ebay-money-back-guarantee-policy/ebay-money-back-guarantee-policy?id=4210> (“eBay Money Back Guarantee means you’re protected if the item you ordered didn’t arrive, is faulty or damaged, or doesn’t match the listing. You’ll get your money back.”).

⁹¹ Zach Church, “Platform Strategy, Explained,” *MIT Sloan*, June 16, 2017, <https://mitsloan.mit.edu/ideas-made-to-matter/platform-strategy-explained> (“‘People were selling plasma TV boxes with stones in them,’ Tucker says.”); eBay, “eBay Money Back Guarantee policy,” <https://www.ebay.com/help/policies/ebay-money-back-guarantee-policy/ebay-money-back-guarantee-policy?id=4210> (“eBay Money Back Guarantee means you’re protected if the item you ordered didn’t arrive, is faulty or damage, or doesn’t match the listing. You’ll get your money back. For all the details of how the eBay Money Back Guarantee works, please see our full policy guidelines below.”).

describes StockX’s coring efforts and, specifically, the steps it takes to ensure a safe and reliable consumer experience.

39. StockX has invested in making trust the core of its brand identity, as reflected in the language used on its website. StockX explains, “At StockX, our mission is to provide a safe and secure experience for buying and selling the world’s most coveted items of current culture” and, “We handle everything to make sure you can buy and sell with confidence.”⁹²

40. StockX relies on various features and technologies to increase trust and accountability on the platform. One of StockX’s most salient trust-building features is its verification process and the accompanying “StockX Verified” label for all products sold on its platform.⁹³ StockX verifies branded products before they are shipped to customers, thereby minimizing counterfeit risk: a problem plaguing both offline and online trades of such items.⁹⁴ StockX’s multi-step and proprietary verification process aims to give buyers confidence that there is no evidence the product has a defect or is not genuine.⁹⁵ This assurance is reflected in this quote from a StockX user:

StockX did a great job making me feel safe and sending a fully vetted product. They made it easy to know their process and what step of the process you are in at any time. Great experience, I would most definitely use them again and recommend them to anyone who is looking to buy shoes that are out of stock elsewhere.⁹⁶

⁹² StockX, “What is the StockX Buyer Promise?,” April 17, 2023, <https://stockx.com/help/articles/What-is-the-StockX-Buyer-Promise>; StockX, “The Current Culture Marketplace,” <https://stockx.com/about/how-it-works/>.

⁹³ StockX, “Every item is StockX Verified,” <https://stockx.com/about/verification> (“Every item is StockX Verified. Shop on StockX with confidence knowing every purchase is StockX Verified. StockX Verified is our own designation and not endorsed by any brands sold on StockX.”).

⁹⁴ Roberto Fontana, Stéphane J.G. Girod, and Martin Králik, “How Luxury Brands Can Beat Counterfeiters,” May 24, 2019, <https://hbr.org/2019/05/how-luxury-brands-can-beat-counterfeiters> (“The total trade in fakes is estimated at around \$4.5 trillion, and fake luxury merchandise accounts for 60% to 70% of that amount, ahead of pharmaceuticals and entertainment products and representing perhaps a quarter of the estimated \$1.2 trillion total trade in luxury goods. Digital plays a big role in this and perhaps 40% of the sales in luxury fakes take place online, as today’s counterfeiters milk the ubiquity and anonymity of the internet space to the last drop.”).

⁹⁵ StockX, “Every item is StockX Verified,” <https://stockx.com/about/verification> (“Our global team of experts uses a rigorous, multi-step verification process ... We leverage machine learning to assess product risk and ever-evolving embedded technologies within the products to enhance our verification efforts. A final check in our verification process, our QA [quality assurance] experts ensure the product meets our high standards.”).

⁹⁶ TrustPilot, “StockX,” <https://www.trustpilot.com/review/stockx.com?stars=5>.

41. StockX also offers a Buyer Promise to make buyers feel more confident purchasing on the platform. StockX’s Buyer Promise covers buyers within a certain timeframe of receiving an item if they believe StockX made a mistake with their order, including incorrectly verifying the product.⁹⁷ StockX users can also receive personalized support from StockX’s Help Center for any issues they may encounter while using the platform.⁹⁸

42. StockX works on ensuring that only reliable buyers and sellers use the platform. StockX provides a uniform product page on which items are listed for sale,⁹⁹ and sellers who repeatedly do not complete sales or send in items that fail verification are liable to have their accounts suspended.¹⁰⁰ Account suspension will also occur for buyers who issue chargebacks with their financial institution without expressing concern of fraud with StockX first.¹⁰¹

43. To further ensure marketplace integrity and prevent fraud, StockX works with partners such as Auth0, a provider of secure logins and account authentication services. StockX also works with Riskified, a provider of fraud management software for eCommerce, and Braintree, a provider of secure payment processing solutions.¹⁰²

⁹⁷ StockX, “What is the StockX Buyer Promise?,” April 17, 2023, <https://stockx.com/help/articles/What-is-the-StockX-Buyer-Promise/> (“The StockX Buyer Promise solidifies this mission by providing support for Buyers should we make a mistake (e.g. we ship you the wrong order, we incorrectly verify an item).”).

⁹⁸ StockX, “The Current Culture Marketplace,” <https://stockx.com/about/how-it-works/> (“Thanks to our Help Center, Chatbot, and dedicated global-support staff, you can be sure that we are always available to answer any and every question regarding our marketplace.”).

⁹⁹ StockX, “The Current Culture Marketplace,” <https://stockx.com/about/how-it-works/> (“[N]o taking photos, no writing catchy descriptions, and no dealing with rogue buyers or sellers. We handle everything to make sure you can buy and sell with confidence.”).

¹⁰⁰ StockX, “Why is My Account on Hold?,” April 10, 2023, <https://stockx.com/help/articles/Why-cant-I-access-my-account/> (“As a Seller, repeated incomplete sales are the most common reason why your account might be suspended. Failure to send items out for verification and failure to send items that pass the StockX verification process will result in penalty fees and eventually suspension, depending on the number of failures and their severity.”).

¹⁰¹ StockX, “Why is My Account on Hold?,” April 10, 2023, <https://stockx.com/help/articles/Why-cant-I-access-my-account/> (“As a Buyer, issuing a chargeback with your financial institution will suspend your account. It is always recommended in the case of suspected account fraud and accidental purchases that you contact StockX Support before asking your financial institution for a chargeback.”).

¹⁰² StockX, “The Current Culture Marketplace,” <https://stockx.com/about/how-it-works/> (“Preserving the integrity of our marketplace means staying a step ahead. Our security and fraud systems, powered by our world class partners, have your personal information covered 24/7.”); Auth0, “About,” <https://auth0.com/about>; Riskified, “Riskified,” <https://www.riskified.com>; Braintree, “Braintree,” www.braintreepayments.com.

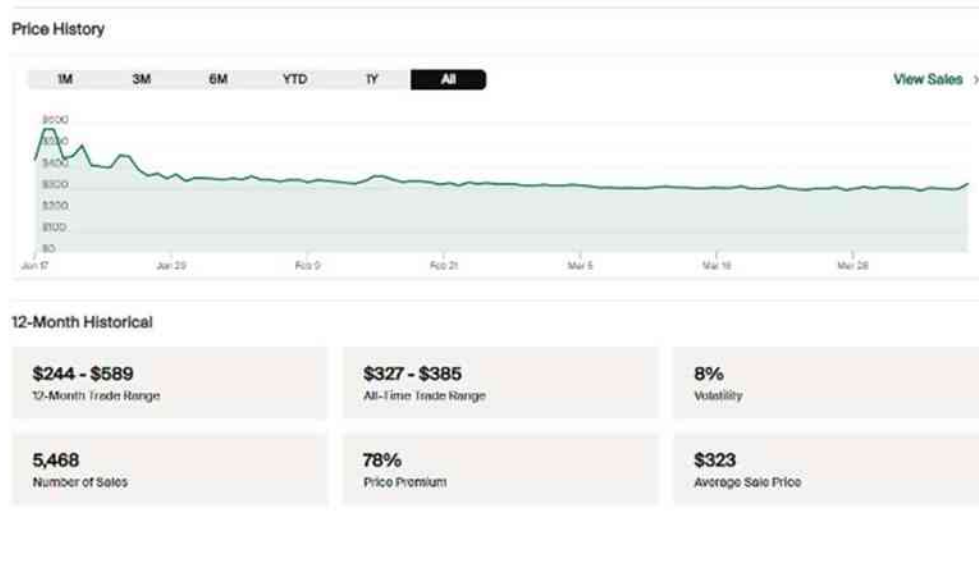
44. StockX also builds trust into transactions by providing buyers and sellers with data so that neither feels like they traded at an unfair price on the platform. This feature of StockX has been described as part of “The Stock[X] formula” as follows:

[StockX] ensures that prices remain somewhat in check. When buying a sneaker, you can get insight into the rises and falls of the prices. In this way, the company remains transparent about the prices and you get insight into the market value of your pair.¹⁰³

45. Each product listing includes historical price data, as well as the 12-month trade range, all-time trade range, price volatility, number of sales, price premium, and average sale price, as illustrated in Exhibit 1. Such information on current and past prevailing prices of certain products helps buyers avoid overpaying for a purchase on the platform. It may also help them identify instances where a price offered is too low to be credible because the sneakers are counterfeit. A range of community forums and websites warn to watch out for low prices. For example, sneakerflippers.com advises traders that “[o]ne of the easiest ways to tell if a pair of sneakers is fake is to check the price. In general, authentic sneakers are very expensive, while fake sneakers are much cheaper. So if you’re looking at a pair of sneakers and the price seems too good to be true, that’s a good sign that the sneakers might be fake.”¹⁰⁴

¹⁰³ Sneaker Jagers, “How StockX Became the Biggest Sneaker Marketplace,” September 30, 2021, <https://www.sneakerjagers.com/en/n/how-stockx-became-the-biggest-sneaker-marketplace/27074>.

¹⁰⁴ Sneaker Flippers, “How to Identify Real vs Fake Sneakers,” April 17, 2022, <https://sneakerflippers.com/tips/reselling/identify-real-fake-sneaker>. See also Shoemakers Academy, “How to Spot Fake Air Jordans,” <https://shoemakersacademy.com/air-jordan-legit-check> (“When shopping for real Nike shoes you should expect to pay real Nike prices. If you find a rare Air Jordan or a unique color at a price that is too good to be true... then it IS too good to be true. Low prices and beat up boxes are your first clue that you have a fake, counterfeit, or illegally smuggled-in B-grade Nike shoe.”), Fast Cop, “How to Spot Fake Sneakers: Complete Guide,” <https://fastcop.com/how-to-spot-fake-sneakers/> (“The most obvious sign that an online store is selling fake sneakers is if their prices are too good to be true. Similar to other items sold online, a hard to believe price is often a good indication that you might not get the authentic or original version of the product you’re looking to buy.”).

Exhibit 1: Example Pricing Data for Product Listed on StockX*d. Other platforms*

46. GOAT, an online platform specializing in the resale of sneakers, streetwear, and luxury apparel, operates a similar system to StockX. Like StockX, GOAT verifies the products traded on its platform after a purchase has taken place and relies on both a team of experts and technologies like digital authentication and machine learning to issue an “Assurance of Authenticity” to buyers.¹⁰⁵ In addition, similar to StockX’s Buyer Promise, GOAT offers a Buyer Protection Policy, whereby buyers can receive a refund if there is a mistake with their order.¹⁰⁶

¹⁰⁵ GOAT, “What is the Assurance of Authenticity?,” 2023, <https://support.goat.com/hc/en-us/articles/115004608127-What-is-the-Assurance-of-Authenticity-> (“Additionally, our resale products and our trusted partners are verified or vetted by a variety of means, such as digital authentication, in-hand verification, and/or machine learning technology.”); ZDNet, “GOAT Uses Machine Learning, Computer Vision to Verify Your Top Dollar Sneakers Are Authentic,” August 19, 2018, <https://www.zdnet.com/article/goat-uses-machine-learning-computer-vision-to-verify-your-top-dollar-sneakers-are-authentic/> (“[W]hen that shoe is purchased, the seller ships it to us to verify. And we verify that product the same day using our sophisticated machine learning and computer vision, and our industry knowledge. And release the funds to the seller. And then we ship that product to the buyer to purchase.”).

¹⁰⁶ GOAT, “Buyer Protection Policy,” <https://www.goat.com/buyer-protection-guarantee> (“In the event the item you received qualifies for a return under one of the scenarios listed above, we will provide you with a shipping label to be used to send the item to GOAT ... If your item is approved under this policy, you will receive a refund in GOAT Credit in the amount of your total purchase.”).

47. Other competitors such as Flight Club and Stadium Goods, follow a consignment model where product authentication happens before products are listed for sale.¹⁰⁷ Stadium Goods’ verification process relies predominantly on in-person inspections of sneakers by trained staff, but it also relies on “a variety of technical methods to ensure [the] inventory’s authenticity.”¹⁰⁸ On Flight Club, all shoes are authenticated and verified by a team of trained specialists.¹⁰⁹

48. Chrono24, a digital marketplace for both new and used watches, takes a different approach to building trust on its platform. Unlike other resale platforms, sellers on Chrono24 ship watches directly to buyers. Because Chrono24 does not physically verify a given watch’s authenticity before it changes hands, Chrono24 has developed other tools to build trust. For watches sold by professional dealers, Chrono24 provides a binding Authenticity Guarantee.¹¹⁰ Listings for watches sold by private sellers, however, must pass inspection by Chrono24 prior to their publication on the platform and are subject to further review by a dedicated 40-person team scanning the platform for suspicious listings.¹¹¹ Finally, buyers have the option to use Chrono24’s escrow service for payments, which ensures that a seller is only paid once the buyer receives their purchase.¹¹²

¹⁰⁷ Niche Pursuits, “Is Flight Club legit? Get all the info to help you decide,” November 2, 2022, <https://www.nichepursuits.com/is-flight-club-legit> (“Flight Club sells new products sourced through retail channels and second-market goods using the consignment model. Sellers send in their shoes, and Flight Club verifies the sneakers before marketing them online or in one of three stores.”); Stadium Goods, “Is Stadium Goods Legit?,” December 20, 2022, <https://www.stadiumgoods.com/en-us/article/is-stadium-goods-legit> (“Stadium Goods is the only aftermarket that pre-authenticates its entire inventory.”).

¹⁰⁸ Stadium Goods, “Authenticity,” <https://www.stadiumgoods.com/en-us/authenticity>.

¹⁰⁹ Flight Club, “How is Flight Club Different From Other Footwear Retailers?,” 2020, <https://support.flightclub.com/hc/en-us/articles/360037122132-How-is-flight-club-different-from-other-footwear-retailers>, (“All shoes are authenticated and verified to be as described by our team of trained specialists”).

¹¹⁰ Chrono24, “Chrono24 - Guarantee of Authenticity,” <https://www.chrono24.com/info/guarantee-of-authenticity.htm> (“The following Guarantee of Authenticity only applies to watches purchased from professional dealers on this platform. Private sellers are not subject to the Guarantee of Authenticity.”).

¹¹¹ Chrono24, “Discover the Safest Path to Your Dream Watch,” <https://www.chrono24.com/about-us.htm> (“Each private seller listing must pass an inspection before we publish it on our platform. As part of the inspection, the seller must provide proof of ownership in the form of two pictures of the watch set to specific times.”; “Our 40-person quality & security team works hard to detect suspicious listings and address issues before they arise, allowing you to focus on what’s most important – finding the right watch!”).

¹¹² Chrono24, “Discover the Safest Path to Your Dream Watch,” <https://www.chrono24.com/about-us.htm>, (“Chrono24 provides Escrow Service for free. Payment is transferred and kept safe in Chrono24’s escrow

49. CardTrader is a platform where users can buy and sell collectible game cards, such as Magic, Pokémon, and Digimon. While many cards are traded for less than a dollar, rare cards can trade for thousands of dollars.¹¹³ CardTrader recently introduced the CTZero program, through which CardTrader stores and verifies cards at a central facility before shipping them on to a buyer.¹¹⁴ Buyers can feel confident in their purchase due to the CTZero Total Safeguard service, where card purchases are verified by CardTrader's quality assurance team, and, if a card does not meet quality standards, it is either replaced by CardTrader at no additional cost to the buyer or the buyer can purchase the lower quality item at a discounted price.¹¹⁵ Sellers participating in the CTZero program benefit from this service as well, as it allows them to avoid costly buyer disputes and non-compliance.¹¹⁶ Finally, with CTZero Total Safeguard, CardTrader users also have access to an extra level of 24/7 customer support to help with any buying and selling concerns.¹¹⁷

50. The prevalence of coring efforts across platforms is evidence of their importance to platform success. Specific efforts will vary across platforms—depending on factors such as the nature of the products and/or services sold—and over time as market conditions change. However, what matters is that platforms continue to invest in such efforts and maintain user trust.

account until you have your watch in your hands. We keep your payment safe in our escrow account for up to 7 days after the day of delivery of your watch and we release your payment to the private seller.”).

¹¹³ See, for example, CardTrader, “Mox Ruby,” <https://www.cardtrader.com/en/cards/mox-ruby-limited-edition-alpha>; CardTrader, “Charizard,” <https://www.cardtrader.com/en/cards/charizard-holo-rare-4-102-base-set-shadowless>.

¹¹⁴ CardTrader, “CardTrader Zero,” <https://www.cardtrader.com/pages/zero> (“CardTrader Zero is simple and intuitive: Buy cards from around the world without paying for shipments. We collect all your cards like a PO Box. Pay only one shipment when you decide to redeem the cards you have collected.”).

¹¹⁵ CardTrader, “CardTrader Zero,” <https://www.cardtrader.com/pages/zero> (“Your purchases will be verified by our team, ensuring precision and efficiency ... Whenever an item is discarded by our quality control team we will replace it for you with no additional costs.”); CardTrader, “CardTrader Zero Terms of Service for Sellers,” <https://www.cardtrader.com/pages/ct-zero-terms-of-service> (“Buyers can set a threshold for non-compliant articles ... if they receive a non-compliant article sold within this threshold, they will repurchase it anyway at a discounted price.”).

¹¹⁶ CardTrader, “CardTrader Zero,” <https://www.cardtrader.com/pages/zero> (“No disputes. Non compliances, delays and loss of packages are entirely handled by our staff and automated system.”).

¹¹⁷ CardTrader, “CardTrader Zero,” <https://www.cardtrader.com/pages/zero> (“24/7 Customer care. Our team is always ready to answer questions, feel free to contact us at any time, we work 24/7.”).

VI. VAULT NFTS ARE A TECHNOLOGY TO FURTHER FACILITATE TRANSACTIONS ON THE STOCKX PLATFORM

51. As marketplaces' *raison d'être* is to facilitate transactions between buyers and sellers through the reduction of search, information, and transaction costs, they have an incentive to invest in features and technologies that reduce these costs. Since trading physical assets can be costly due to transportation, storage, and quality verification processes, multiple features and technologies have been developed throughout recent history to facilitate their trade, including the following three: (1) untethering ownership from physical possession, for instance through the blockchain and physical NFTs; (2) innovations that reduce information costs through reduced verification costs, and (3) storage solution vaults that improve the tradability of physical goods.

52. StockX's Vault NFTs are an innovation that incorporates these three features. Trading physical goods can be costly because, to complete a sale on StockX, the seller must ship the product to StockX, then StockX must verify the product and ship the product to the buyer. Vault NFTs, digital tokens tied to the verified physical goods stored in StockX's vault, help eliminate some of these steps. As a result, StockX's Vault NFTs are an innovation that reduces transaction costs associated with the trade of physical goods, which can be beneficial to consumers interested in trading sneakers and other collectibles.

A. Technologies and features that facilitate the trade of physical objects

53. Marketplaces, firms, and institutions in different historical contexts and using different types of technologies, have reduced the frictions that make trading physical objects difficult. More recently, various firms have worked on using the blockchain to achieve that goal.

1. *Untethering ownership from physical possession of assets*

54. Untethering ownership from physical possession of assets to reduce transaction costs has been a primary motivation behind financial and monetary innovation. For instance, the introduction of paper money removed the burden and risks of transporting heavy gold and silver coinage for individuals, ultimately creating a more convenient means of payment. The creation of check clearinghouses and a national checking network in the late nineteenth century reduced transaction costs for banks, as they no longer needed to send daily messengers to every other

local bank to clear checks. Those lower transactions costs allowed checks from increasingly distant banks to be honored locally.¹¹⁸

55. Innovations in commodity markets were similarly designed to reduce trading frictions by untethering the act of trading from taking possession of physical objects. Grain traders in early nineteenth-century Chicago faced substantial storage and transportation costs every time they traded a shipment of grain, as the grain needed to be moved between silos each time.¹¹⁹ In the late nineteenth century, the invention of futures contracts, which stipulated the delivery of a commodity on a certain date at a certain price, reduced the number of physical transactions to one. Grain traders could buy and sell the futures contracts as many times as desired in the interim without the grain physically changing hands.

56. More recently, blockchain technology and tokenization have been used to enable the trade of ownership rights without the need to physically transfer the underlying items. A blockchain is a digital database or ledger that stores transactional data across a network of computers in a distributed and decentralized fashion.¹²⁰ An emerging application of blockchain technology is asset tokenization, a process in which rights to tangible assets, which may be physical or digital, are converted into tradeable tokens, which can be traded digitally.¹²¹ In this way, tokenization makes the trade of tangible assets more efficient, especially for relatively

¹¹⁸ David Evans and Richard Schmalensee, *Paying with Plastic: The Digital Revolution in Buying and Borrowing* 2 Ed., Cambridge, MA, The MIT Press, 2005, p. 41 (“Local banks received an increasing volume of out-of-town checks from merchants. The problem wasn’t just how to present that check—in person or by mail. Checks drawn on distant banks were more likely to bounce: it was harder to know whether any particular check was legitimate, ore difficult to collect from travelers, and harder for the law to catch a bad-check artist on the move. Hence, an out-of-town check wasn’t worth as much as one drawn on a local bank.”).

¹¹⁹ Joseph Santos, “A History of Futures Trading in the United States,” <https://eh.net/encyclopedia/a-history-of-futures-trading-in-the-united-states/> (“By the 1840s, grain elevators and railroads facilitated high volume grain storage and shipment, respectively. Consequently, country merchants and their Chicago counterparts required greater financing in order to store and ship this higher volume of grain.”).

¹²⁰ McKinsey & Company, “What is blockchain?,” December 5, 2022, <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-blockchain/> (“Blockchain is a technology that enables the secure sharing of information. Data, obviously, is stored in a database. Transactions are recorded in an account book called a ledger. A blockchain is a type of *distributed* database or ledger – one of today’s top tech trends – which means the power to update a blockchain is distributed between the nodes, or participants, of a public or private computer network.”).

¹²¹ LeewayHertz, “Asset Tokenization – Real Assets on the Blockchain,” <https://www.leewayhertz.com/what-is-asset-tokenization/> (“Asset tokenization refers to the process of converting real assets into digital assets.”).

illiquid asset classes such as art, luxury items, real estate, or even commodities.¹²² The tokens can be fungible—for instance, a token granting fractional ownership of a parcel of land, as it is interchangeable with another token or set of tokens granting the same share of ownership. They can also be non-fungible. NFTs represent ownership of unique items and are non-fungible in that they cannot be replaced.¹²³ For instance, a token linked to a specific piece of art is an NFT.

2. *Technologies and services to reduce information costs through reduced verification costs*

57. Many institutions and firms have put in place technologies to reduce information costs through reduced verification costs, which has been beneficial for trade. For example, the Gemological Institute of America (GIA), founded in 1931, has played a critical role in facilitating the trade of diamonds by making information more transparent and cheaper to obtain for diamond buyers and sellers. In 1953, the GIA created a grading standard called the 4Cs, and started issuing diamond grading reports. The grading standard has become a universal standard and the diamond grading reports are now a benchmark in the jewelry industry, assessing their quality with respect to color, clarity, cut, and carat weight.¹²⁴ In the 1980s, technology was developed to laser inscribe diamonds, allowing GIA to link the unique number of a diamond’s grading report to the stone through laser engraving, forever linking the stone to its one-time

¹²² Investopedia, “Non-Fungible Token (NFT): What it Means and How it Works,” April 6, 2023, <https://www.investopedia.com/non-fungible-tokens-nft-5115211> (“Tokenizing these real-world tangible assets makes buying, selling, and trading them more efficient while reducing the probability of fraud.”); LeewayHertz, “Asset Tokenization – Real Assets on the Blockchain,” <https://www.leewayhertz.com/what-is-asset-tokenization>, (“From exotic assets like artwork, sports teams and racehorses to traditional assets like bonds, real estate, venture capital funds, and commodities, almost every asset class can be tokenized.”).

¹²³ Kirk Plangger, Dhruv Grewal, Ko De Ruyter, and Catherine Tucker, “The Future of Digital Technologies in Marketing: A conceptual Framework and an Overview,” *Journal of the Academy of Marketing Science*, Vol. 50, No. 6, 2022, pp. 1125-1134, p. 1130 (“[N]on-fungible tokens (NFTs) allow for a range of digital products to come to market, secured by blockchain ledgers that establish them as original and unique.”); Business Insider, “What to Know About Non-Fungible Tokens (NFTs),” July 12, 2022, <https://www.businessinsider.com/personal-finance/nft-meaning> (“A non-fungible token (NFT) is a unique digital asset that represents ownership of real-world items like art, video clips, music, and more. NFTs use the same blockchain technology that powers cryptocurrencies, but they’re not a currency.”).

¹²⁴ Gemological Institute of America, “What is a GIA Diamond?,” <https://4cs.gia.edu/en-us/blog/what-is-a-gia-diamond>; Gemological Institute of America, “About GIA,” <https://www.gia.edu/gia-about>.

quality assessment.¹²⁵ This technology further reduced information costs, by reducing the need for future authentication.

58. Similarly, CARFAX’s vehicle history reports help reduce information costs in the market for used cars by providing buyers with information such as the car’s service history and potential accidents. This service simplifies the process for potential buyers to ascertain the quality of the car they are interested in, enabling them to “avoid buying a car with costly hidden problems.”¹²⁶ Such services help sales to take place, even when the buyer does not know the specific seller or how trustworthy they are.

59. Blockchain technology, and associated innovations like NFTs, have also been used to reduce information costs. What distinguishes blockchain from other databases is that the data stored on a blockchain is functionally immutable. In other words, no party can retroactively alter data associated with a transaction once that transaction has been added to the blockchain.¹²⁷ This feature has the potential to transform trade on digital marketplaces, as it provides a tool to verify and maintain records of transactions that does not rely on a third party or central authority. Such a decentralized mechanism both lowers the costs for marketplaces to verify digital information and increases the trust in the reliability of this information.¹²⁸ Therefore, from an

¹²⁵ Gemological Science International, “Laser Inscription on Diamonds,” <https://gemscience.net/services-and-reports/lab-services/laser-inscription-on-diamonds> (“By 1980, a major gemological laboratory in the United States successfully implemented the laser inscription process, and it was the first commercial application of diamond marking. The process was complex and required a lot of time and special equipment, but its commercial success showed that there is a definite need for marking on diamonds.”); Diamond Buzz, “Diamond Laser Inscription,” December 20, 2022, <https://diamondbuzz.blog/diamond-laser-inscription> (“Diamond laser inscription, provided by a grading laboratory, ensures that the stone you buy matches the issued grading report or certificate. It allows an instant verification that the stone is the one described in the report as the number or wording is permanently registered in the lab’s archive database. In other words, an inscription gives added security and peace of mind when making a diamond purchase. It is also helpful to jewellers [sic] and diamond merchants for quality control.”).

¹²⁶ Carfax, “Carfax Vehicle History Reports,” <https://www.carfax.com/vehicle-history-reports>.

¹²⁷ Catherine Tucker and Christian Catalini, “What Blockchain Can’t Do,” Cambridge, MA, Harvard Business Review, 2019, p. 61 (“Blockchain technology has the potential to do amazing things. It can provide an immutable, digital audit trail of transactions and can be used to cheaply verify the integrity of data.”).

¹²⁸ Catherine Tucker and Christian Catalini, “What Blockchain Can’t Do,” Cambridge, MA, Harvard Business Review, 2019, p. 62 (“[Blockchain] can therefore replace the need for trust between players, or the need for a central authority to verify and maintain the records of transactions.”); Christian Catalini and Catherine Tucker, “Antitrust and Costless Verification: an Optimist and a Pessimistic View of the Implications of Blockchain Technology,” *Antitrust Law Journal*, Vol. 82, No. 3, 2019, pp. 861-872, p. 1 (“Blockchain technology, by allowing economic agents to verify transactions and their attributes without the same need for trust or third-party verification, fundamentally changes how marketplaces operate. This is particularly relevant for digital

economist’s perspective, the value of blockchain technology lies in the creation of permissionless and automated trust.¹²⁹ One example of the use of this technology is high-end watch brand Breitling, which sells each watch with a corresponding NFT that serves as proof of ownership and authenticity.¹³⁰ This technology has been perceived as having the potential to replace official papers that denote ownership, which are often necessary for owners selling watches on the secondary market.¹³¹

3. *Storage solutions such as vaults*

60. Vault-like storage solutions for collectibles have also been used to make it cheaper to trade physical items. Goldin and CardTrader are two examples of firms offering storage solutions to customers, which serve to reduce transaction costs. Goldin is a digital marketplace and auction-house for sports memorabilia, including game-worn jerseys, autographed sportswear, and vintage sports cards. Similar to StockX, Goldin allows collectors to store items bought through them in a physical vault. Collectors do not need to pay sales tax, shipping fees, or storage fees for items they choose to store in the Vault, which considerably reduces transaction fees for buyers and sellers.¹³² Goldin is currently facilitating peer-to-peer

marketplaces. Blockchain technology lowers the cost of verifying digital information but does not lower the cost of verifying offline information.”).

¹²⁹ Christian Catalini and Catherine Tucker, “Antitrust and Costless Verification: an Optimist and a Pessimistic View of the Implications of Blockchain Technology,” *Antitrust Law Journal*, Vol. 82, No. 3, 2019, pp. 861-872, pp. 2-3 (“Blockchain technology takes advantage of cryptography and incentives to replace trust and third-party verification. ... Incentives are needed to protect the shared data from being altered by an adversary or bad actor, and to ensure that transactions or assets cannot be forged or modified *ex post*. For example, in implementations that rely on proof-of-work (‘mining’), an economic cost is introduced to make it prohibitively expensive to rewrite history and subvert the consensus about the true state of the shared data once it is formed.”).

¹³⁰ Crypto News, “NFTs and Their Role in the Luxury Watch Industry,” February 10, 2023, <https://cryptonews.com/news/nfts-their-role-luxury-watch-industry.htm> (“Breitling, a well-respected manufacturer with a history stretching back as far as 1884, has harnessed the power of the metaverse in an entirely different way. Since October 2020, all Breitling watches have come with their own NFT (or digital passport, as the company calls them) as proof of ownership and authenticity.”).

¹³¹ Crypto News, “NFTs and Their Role in the Luxury Watch Industry,” February 10, 2023, <https://cryptonews.com/news/nfts-their-role-luxury-watch-industry.htm> (“It has been speculated that such [NFT] technology will soon replace the original papers that accompany a luxury watch when bought from an official retailer. These documents are often vital on the secondary market, playing a huge role in resale value and in ensuring potential buyers that the seller is the timepiece’s rightful owner.”).

¹³² Goldin, “The Official Vault of Goldin,” <https://goldin.co/vault> (“Pay no sales tax, storage, or shipping fees on Goldin purchases sent to the Vault. Plus your items are 100% insured.”).

transfers of ownership for items stored in its vault and has expressed an intention to add greater marketplace functionality to its website.¹³³

61. CardTrader, discussed in Section V, also offers a storage solution for its users, the CTZero service. Buyers who enroll in the service can purchase cards from multiple sellers around the world and choose to have them stored centrally in CardTrader’s warehouse “with no limits on time or quantities.”¹³⁴ Buyers are responsible for only a single shipping fee when they are ready to retrieve their cards, which does not depend on the number of cards or their original geographic provenance.¹³⁵ Sellers also save on shipping costs, as the service allows them to ship sold cards to the CardTrader warehouse in bulk rather than ship the cards to individual buyers.

B. Vault NFTs reduce trading costs for sneaker traders

1. Sneaker traders are a key group of StockX’s users

62. As explained in Section IV.B, StockX and similar resale platforms have increased both overall interest and participation in the resale sneaker market. One of the groups that has particularly benefited from the emergence of StockX and similar resale platforms are sneaker traders. Traders are typically individuals who see rare sneakers as opportunities for arbitrage and are primarily interested in purchasing sneakers to resell them at a profit.

63. StockX, especially in comparison to rival resale platforms, has developed a platform that appeals to sneaker traders looking to buy and later resell sneakers. The original impetus for launching StockX—as suggested by its name—was to create a “stock market of

¹³³ Goldin, “Frequently Asked Questions,” <https://vault.goldin.co/faqs> (“If you would like to sell an item that you have stored in the vault, you have several options. You can consign it for sale in one of our upcoming auctions by emailing your consignment director or info@goldinauctions.com or we can help you find a buyer through a private sale by emailing info@goldinauctions.com. We are currently facilitating peer-to-peer title transfers and will offer additional marketplace functionality on our site later this year. If you would like a title transfer, email vault@goldinauctions.com.”).

¹³⁴ CardTrader, “CardTrader Zero,” <https://www.cardtrader.com/pages/zero>.

¹³⁵ CardTrader, “CardTrader Zero,” <https://www.cardtrader.com/pages/zero> (“You can request that we ship your purchases at any time. You will pay a single shipping fee, no matter where the sellers you bought from are located or how many they are.”).

things” in which the value of sneakers and apparel was transparent and updated in real time.¹³⁶ StockX has successfully integrated this original vision into the current platform where, as detailed in Section V.B.2, users have access to a wide range of data for every item sold on StockX.¹³⁷ Such extensive pricing data is useful not only for collectors looking for a good deal on StockX, but also for sellers throughout the resale market, who turn to StockX to determine the market price for their items.¹³⁸ StockX has been nicknamed the Kelley Blue Book of sneakers,¹³⁹ a reference to the established automotive research company providing vehicle valuation services.¹⁴⁰

¹³⁶ Jacob Gallagher, “This Website is the Stock Market for Nikes and Rolexes,” *The Wall Street Journal*, November 26, 2018, <https://www.wsj.com/articles/this-website-is-the-stock-market-for-nikes-and-rolaxes-1543251772> (“Mr. Luber envisioned a more orderly market, with a New York Stock Exchange-style ticker, that would make the value of a pair of sneakers transparent, in real time.”) and (“Mr. Gilbert bought Campless in 2015 and the pair joined forces (along with COO Greg Schwartz), launching StockX, “the stock market of things,” based in Mr. Gilbert’s hometown of Detroit in February 2016.”).

¹³⁷ Dan Hyman, “A Nasdaq for Sneakerheads? StockX Aims to Tame ‘Chaos’ of Luxury Market,” *The New York Times*, July 6, 2018, <https://www.nytimes.com/2018/07/06/business/smallbusiness/stockx-sneakerheads-luxury-goods.html> (“On StockX, products, which include streetwear, handbags and watches in addition to sneakers, are assigned ticker symbols. Sellers put out asking prices, and buyers bid. Users can see data like recent sale figures from across the internet, price volatility, and 52-week highs and lows. Once a bid and an ask coincide, the sale is automatically made.”).

¹³⁸ Jacob Gallagher, “This Website is the Stock Market for Nikes and Rolexes,” *The Wall Street Journal*, November 26, 2018, <https://www.wsj.com/articles/this-website-is-the-stock-market-for-nikes-and-rolaxes-1543251772> (A sneaker seller interviewed for the article claimed, “everyone looks at StockX and takes it as the market price”); Jessica Testa, “Sneaker Sellers Wrestle With Price Spikes After Virgil Abloh’s Death,” *The New York Times*, December 16, 2021, <https://www.nytimes.com/2021/12/16/style/sneakers-price-spikes-virgil-abloh.html> (The owner of a resale sneaker store in Seattle asserted that “when people come in now to sell shoes, we look at StockX as the price reference, and we’ve upped our offers to reflect the market.”).

¹³⁹ Wells Report, ¶ 110 (“StockX is also valuable for many Sneakerheads because it provides detailed and otherwise difficult to obtain information like the sale history and average sale price for every model of sneaker. This data is not only useful for consumers looking for a good deal, but also helps set prices in the resale market, since resellers often reference StockX to determine a fair price for their items. In this regard, StockX has been described to be for the sneaker market what the Kelley Blue Book is for the car market.”); Polina Noskova, “This Sneakerhead Made a Stock Exchange for Shoes,” *Forbes*, August 18, 2016, <https://www.bloomberg.com/news/articles/2016-08-18/this-sneakerhead-made-a-stock-exchange-for-shoes> (“[Josh Luber, the founder of StockX.] collected EBay’s pricing data and built the kind of guide for sneakers that Kelley Blue Book compiles for automobiles.”).

¹⁴⁰ Kelley Blue Book, “History,” <https://www.kbb.com/company/history> (“We deliver up-to-date car values, expert reviews and unbiased reporting at no cost to you.”).

2. *Vault NFTs*

64. StockX created Vault NFTs as an innovative way to provide users of its platform with a “new, faster, cheaper and more efficient trading experience.”¹⁴¹ By issuing Vault NFTs, StockX untethers ownership from physical possession of products and enables its users to trade ownership rights without physical products ever needing to be relocated.¹⁴² As explained by StockX on its website, Vault NFTs allow customers to buy and resell products almost immediately, bypassing physical trade and its associated costs, both in terms of money and time.¹⁴³ In addition, each Vault NFT is linked to a specific authenticated physical product, which is stored in StockX’s secure, climate-controlled facility and depicted on the NFT.¹⁴⁴ This feature reduces both information costs—bypassing the need for re-verification—and costs related to storage logistics and safety. As a result, Vault NFTs reduce various types of frictions associated with the trade of physical products. [REDACTED]

145

3. *Vault NFTs reduce trading costs, including by eliminating the costs of shipping and re-verification*

65. Trading Vault NFTs, rather than physical products, reduces the transaction and information costs incurred while trading on StockX. In particular, buyers and sellers will save on

¹⁴¹ StockX, “NFTs,” <https://stockx.com/lp/nfts>.

¹⁴² StockX, “NFTs,” <https://stockx.com/lp/nfts> (“Introducing Vault NFTs on StockX, new digital tokens providing unprecedented access and utility for our customers. Each Vault NFT is tied to a physical product (as depicted on the NFT), which is stored in our brand new, climate-controlled, high-security vault.”).

¹⁴³ StockX, “NFTs,” <https://stockx.com/lp/nfts> (“Because each Vault NFT is tied to a physical product already stored in the StockX vault, you no longer have to wait several days before you can resell, and you do not have to pay fees associated with multiple legs of shipping and authentication.”); StockX, “StockX Launches Vault NFTs,” January 18, 2022, <https://stockx.com/about/stockx-launches-vault-nfts> (“Vault NFTs are minted under custodial authority as ERC-1155 tokens on the Ethereum blockchain to reduce transaction fees, minimize environmental impacts, and create provenance.”).

¹⁴⁴ StockX, “NFTs,” <https://stockx.com/lp/nfts> (“Each Vault NFT is tied to a physical product (as depicted on the NFT), which is stored in our brand new, climate-controlled, high-security vault.”).

¹⁴⁵ [REDACTED]

shipping fees and time, as the product underlying a Vault NFT does not have to physically change hands. [REDACTED]

[REDACTED]¹⁴⁷ Another benefit associated with Vault NFTs is that the verification process for the underlying product must happen only once, not every single time the asset is traded. Because the physical products tied to the Vault NFTs are stored in a secure and central location, they need not be verified each time the Vault NFTs are traded. As a result, trading costs are reduced.

66. To illustrate these savings, Exhibit 2 compares the fees incurred by sellers and buyers when trading a physical pair of sneakers on StockX with the fees incurred for trading a Vault NFT of the same total price—here, \$225.

67. The buyer of a physical pair of shoes on StockX pays shipping, product verification, and payment processing fees, which are proportional to the value of the shoes.¹⁴⁸ The seller of physical sneakers on StockX has to pay an 8 to 10% transaction fee, a 3% payment processing fee, and a shipping fee that depends on a number of factors.¹⁴⁹ For the trade of a

¹⁴⁶ [REDACTED]

¹⁴⁷ [REDACTED]

¹⁴⁸ StockX, “How much does shipping cost for Buyers?,” July 22, 2022, <https://stockx.com/help/articles/How-much-does-shipping-cost-for-buyers> (“Shipping fees vary based on a variety of factors including the price of the item, size of the item, item type, shipping costs determined by our carrier partners, and the shipping destination of the Buyer.”); StockX, “What are StockX’s fees for Buyers?,” August 3, 2022, <https://stockx.com/help/en-GB/articles/What-are-StockXs-fees-for-buyers> (“As a Buyer on StockX, you are responsible for paying processing fees, as well as any customs duties and sales tax based on your shipping address.”).

¹⁴⁹ StockX, “How much does shipping cost for sellers?,” December 30, 2022, <https://stockx.com/help/en-GB/articles/How-much-does-shipping-cost-for-Sellers> (“Shipping fees vary according to several factors including the price of the item, size of the item, item type, shipping costs determined by our carrier partners, and the Seller’s location.”); StockX, “What are StockX’s fees for Sellers?,” March 27, 2023,

physical pair of shoes worth a total of \$225, buyer and seller jointly pay almost \$60 in total fees associated with the trade.

68. By contrast, trading a Vault NFT on StockX entails much lower fees. First, it does not involve any shipping fees for both buyer and seller and processing fees for the buyer.¹⁵⁰ The transaction and payment processing fees paid by the seller are about two-thirds lower, at 3% and 1% compared to 8-10% and 3%.¹⁵¹ The total transaction fees associated with the trade of a Vault NFT are a small fraction—around 16%—of the total transaction fees associated with the trade of the physical pair of sneakers, at \$9 compared to \$57.25.¹⁵²

Exhibit 2: Exemplar Comparison of Transaction Costs Associated with the Trade of a \$225 Physical Pair of Shoes and a \$225 Vault NFT on StockX¹⁵³

Cost Items	Physical Pair	Vault NFT
<i>Buyer</i>		
Shipping fee	\$15.00	-
Processing and verification service fee ^[1]	\$13.50	-
<i>Seller</i>		
Shipping fee within the US	\$ 4.00	-
Payment processing fee ^[2]	\$ 6.75	\$ 2.25
Transaction fee ^[3]	\$18.00	\$ 6.75
Total	\$57.25	\$ 9.00

Notes:

[1] Processing and verification fees may vary, as they are determined by the price of the item, the

<https://stockx.com/help/articles/What-are-StockXs-fees-for-sellers> (“For all StockX sales there is a 3% payment processing fee, as well as a transaction fee that is determined by your Seller Level in accordance with the StockX Seller Program”).

¹⁵⁰ StockX, “What fees are associated with Vault NFTs?,” April 14, 2022, <https://stockx.com/help/articles/What-fees-are-associated-with-Vault-NFTs> (“When purchasing an NFT, customers are not subject to StockX processing or shipping fees nor sales tax.”).

¹⁵¹ StockX, “What fees are associated with Vault NFTs?,” April 14, 2022, <https://stockx.com/help/articles/What-fees-are-associated-with-Vault-NFTs> (“When selling an NFT, customers are subject to a 3% transaction fee plus a 1% payment processing fee.”).

¹⁵² $\$9 / \$57.25 * 100\% = 15.7\%$.

¹⁵³ Tidal Market, “How Much is StockX Shipping?,” February 6, 2023, www.tidalmarket.com/blog/how-much-is-stockx-shipping (“Shipping fees are different depending on the price, weight, and category the item is in. For the most part, all shoes and electronics will be around \$15.”); StockX, “What are StockX’s fees for Buyers?,” August 3, 2022, <https://stockx.com/help/en-GB/articles/What-are-StockXs-fees-for-buyers> (“As a Buyer on StockX, you are responsible for paying processing fees, as well as any customs duties and sales tax based on your shipping address. There is no set percentage for fees, as these are determined by the price of the item, the

location of the Seller and Buyer, and supply and demand. To estimate typical processing and verification fees, I limit the physical data to sneakers with a gross monetary value of \$225, divide the buyer fee for each relevant transaction by \$225, then take the average of these ratios. The resulting average is 6% ($6\% * \$225 = \13.50).

[2] For a physical pair of shoes, the payment processing fee is 3% ($3\% * \$225 = \6.75). For a Vault NFT on StockX, the payment processing fee is 1% ($1\% * \$225 = \2.25).

[3] For a physical pair of shoes, I assume an 8% transaction fee because this represents the lower end of the possible 8-10% range advertised on the StockX website ($8\% * \$225 = \18.00). For a Vault NFT on StockX, the transaction fee is 3% ($3\% * \$225 = \6.75).

69. Vault NFTs may also lower trading costs in other ways. For example, Vault NFTs can be traded more quickly than physical items, as any delays related to shipping and verification are eliminated.

70. In addition, StockX’s storage services provide the potential for a less costly and more convenient option for owners to manage and safely store their collections. Sneaker collectors often keep digital records of their inventory in a spreadsheet—which records information such as the brand, model, colorway, and release date—and affix photos of shoes to their boxes to facilitate identification and retrieval from a dedicated storage space at home.¹⁵⁴ Owners of especially large inventories often rent separate storage facilities, which may lack the appropriate safeguards against theft.¹⁵⁵ Vault NFTs allow their owners to delegate all storage-

location of the Seller and Buyer, and supply and demand. These will never change after you have placed a Bid.”); StockX, “Physical Data,” STX0806026; StockX, “How much does shipping cost for sellers?,” December 30, 2022, <https://stockx.com/help/en-GB/articles/How-much-does-shipping-cost-for-Sellers> (showing US Shipping Costs of \$4.00); StockX, “What are StockX’s fees for Sellers?,” March 27, 2023, <https://stockx.com/help/articles/What-are-StockXs-fees-for-sellers> (“For all StockX sales there is a 3% payment processing fee, as well as a transaction fee that is determined by your Seller Level in accordance with the StockX Seller Program,” which ranges from 8.0% to 10.0%, depending on the sales requirement, if any.); StockX, “What fees are associated with Vault NFTs?,” April 14, 2022, <https://stockx.com/help/articles/What-fees-are-associated-with-Vault-NFTs> (“When purchasing an NFT, customers are not subject to StockX processing or shipping fees nor sales tax. When selling an NFT, customers are subject to a 3% transaction fee plus a 1% payment processing fee.”).

¹⁵⁴ Wells Report, ¶113 (“Many Sneakerheads use methods like taking photos of the sneakers and putting the photos on the outside of the box. This helps them quickly identify which sneakers are in which box and can save time when searching for a specific pair. They often keep a detailed inventory of their collection in a Google Doc, including information about each sneaker like the brand, model, colorway, and the release date, to keep track of their collection.”).

¹⁵⁵ WPCO, “Cincinnati Business Owner Out \$100,000 After Thieves Steal Hundreds of Sneakers From Storage Unit,” April 8, 2022, <https://www.wcpo.com/news/local-news/hamilton-county/cincinnati/avondale/cincinnati-business-owner-out-100-000-after-thieves-steal-hundreds-of-sneakers-from-storage-unit> (“[The victim] said his 300 sneakers were safe at CubeSmart Self Storage in Avondale. When he returned, though, everything was gone. ‘Probably about an estimated value of \$100,000 dollars,’”); Sneaker Shop Talk, “Stupid things People do for Sneakers: Thieves Steal Hundreds of Kicks From Business Owner’s Storage Locker,” June 3, 2022, <https://sneakershoptalk.com/stupid-things-people-do-for-sneakers-thieves-steal-hundreds-of-kicks-from->

related logistics to StockX, which safely stores the underlying physical product in a climate-controlled, high-security vault and provides an online interface for owners to quickly view the contents of their collection.

C. Other examples of innovative uses of physical NFTs and storage solutions

71. Other examples of innovations featuring physical NFTs¹⁵⁶ accompanied by storage solutions can be found in the fine liquor, fine wine, and luxury watch industries. For instance, BlockBar is a platform that sells Ethereum blockchain-based NFTs associated with physical bottles of liquor, including bottles from luxury brands, such as Patrón and Rémy Martin.¹⁵⁷ Like StockX, BlockBar provides authentication¹⁵⁸ and storage services¹⁵⁹ for bottles sold on the platform, and users have the option to trade their NFTs on the BlockBar marketplace or redeem them in exchange for the physical bottle. BlockBar recently recruited Sotheby’s Worldwide Chairman of Wine and Spirits to serve as its Chief Operating Officer.¹⁶⁰

business-owners-storage-locker (“A Southwest Miami-Dade area storage facility found itself the victim of a burglary, with multiple units being hit, including one ... containing hundreds of pairs of expensive sneakers.”); 10 News San Diego, “More than \$100,000 Worth of Sneakers Stolen in Mission Valley Storage Theft,” July 16, 2021, <https://www.10news.com/news/local-news/more-than-100-000-worth-of-sneakers-stolen-in-mission-valley-storage-theft> (“[A] thief emptied out his rented storage locker, stealing more than \$100,000 in sneakers.”).

¹⁵⁶ CoinGape, “Explained: What is Physical NFT? And How to Sell Physical Items as NFT,” December 28, 2022, <https://coingape.com/education/explained-what-is-physical-nft-and-how-to-sell-physical-items-as-nft> (“Physical NFTs are cryptographic tokens linked to physical assets that provide ownership of artwork, merchandise, property deeds, and other assets. Physical NFTs have two parts where the digital one is stored on a blockchain, and the physical one is the one that you own in real life.”).

¹⁵⁷ BlockBar, “BlockBar,” <https://blockbar.com> (“BlockBar is a platform that offers NFTs (digital assets) directly from luxury liquor brands. Each NFT corresponds to a physical bottle. Consumers have the ability to exchange the digital version for the physical version. In simple terms, consumers own the physical bottle, BlockBar stores it for them, and the digital version serves as proof of authenticity, verification of ownership, and the right to have the physical bottle delivered.”).

¹⁵⁸ BlockBar, “BlockBar,” <https://blockbar.com> (“BlockBar proves authenticity via Ethereum’s blockchain. By buying the NFT directly from the brand, we not only make the process easier, but we ensure that your asset has proven authenticity. Whether you grow your collection, send it as a gift, or resell it, authenticity will never be an issue. BlockBar ensures 100% instant authenticity to all collectors up until the moment they redeem the bottle.”).

¹⁵⁹ BlockBar, “How it Works,” <https://blockbar.com/how-it-works> (“As the NFTs are minted, the brands ship the bottles to BlockBar’s secure warehouse in Singapore. This warehouse is bonded, temperature controlled and insured. Storing your own spirits is extremely difficult and expensive so BlockBar takes care of this for you.”).

¹⁶⁰ Medium, “Sotheby’s Worldwide Chairman of Wine and Spirits to Join BlockBar,” <https://medium.com/@blockbar/sothebys-worldwide-chairman-of-wine-and-spirits-to-join-blockbar->

72. Like liquor, wine can be an attractive and valuable asset, but is difficult to trade due to significant transportation and storage costs. There are also unique concerns about verifying provenance when it comes to investing in fine wine.¹⁶¹ To address these inefficiencies, WiV Technologies verifies and stores crates of wine at a central facility, and then issues easily tradable tokens to owners, which are linked to the physical crates of wine.¹⁶²

73. In the luxury watch industry, much like StockX, VeblenVault sells physical NFTs for a variety of luxury-brand watches and stores the underlying time pieces in “secure and insured vaults.”¹⁶³ As noted on the company’s website, “Veblen Vault NFTs capture the price movements of physical assets without assuming the risks of secure storage, damage, theft and appropriation.”¹⁶⁴ The online platform WatchBox is pursuing a similar venture, including both physical NFTs and storage services.¹⁶⁵

e39b296dd5db (“Jamie Ritchie to become Chief Operating Officer of BlockBar, the startup that is democratizing the world of wine and spirits through their unique blockchain based business model.”).

¹⁶¹ EY, “EY Helps WiV Technology Accelerate Fine Wine Investing With Blockchain,” August 12, 2019, https://www.ey.com/en_gl/news/2019/08/ey-helps-wiv-technology-accelerate-fine-wine-investing-with-blockchain (The CEO of WiV says that “[f]ine wine is a fully tradeable asset, and it is vitally important that provenance is protected, because provenance is the only way to prove a wine’s true value without actually opening the bottle. Currently, many wine trades often slow to a crawl because the extensive paper trails must be manually checked at every step of the process, massively reducing the potential size of the market. We are enhancing the ecosystem so that fine wine investments can be traded as quickly, easily and safely as books are online. We want to make fine wine an asset that people invest in with confidence.”).

¹⁶² WiV, “The First Company Bringing Physical to Digital as NFTs,” <https://wiv.io> (“At WiV we have developed a proprietary technology solution that allows us to verify, secure authenticity and provenance of physical real world assets (pRWA), starting with wine, by combining IoT and blockchain technology... By authenticating these physical assets (PRWA) and pairing them with a digital counterpart, we allow anyone who owns a WiV asset to trade it with anyone else in the world without the hassle of holding the pRWA or having to worry about fraud and counterfeiting.”); The WiV Company, WiVA - The Future of Wine, 2022, ([audio] at 0:15-0:23 “The wine itself is housed in professionally managed cellars to ensure that it is maintained in top condition and that its provenance is assured”).

¹⁶³ Veblen Vault, “About Us,” <https://veblenvault.com/about-us> (“Together, we have created a new way to enjoy collecting and trading watches by storing high end timepieces in secure and insured vaults and tokenizing the ownership on the Ethereum blockchain.”).

¹⁶⁴ Veblen Vault, “Veblen Vault,” <https://veblenvault.com>.

¹⁶⁵ WatchPro, “WatchBox Creates Tradeable NFT Avatars of Luxury Watches,” April 28, 2022, <https://www.watchpro.com/watchbox-creates-tradeable-nft-avatars-of-luxury-watches> (“Origyn and WatchBox will produce Utility NFTs for watches, which can be traded independently from the physical items. ... It means Watchbox could create and sell the NFT of a watch that remains in its safe and under its security. The owner of that unique NFT (and the watch to which it is attached) could then be traded at any point in the future — instantly like selling shares, and safely because it would be a legally binding trade. These NFTs also tackle the issue of counterfeit watches by acting as blockchain-based certificates of authenticity for luxury watches purchased on WatchBox’s platform.”).

VII. THE EVOLUTION OF VAULT NFT PRICES LINKED TO NIKE SHOES

74. In its amended complaint, Nike claims that “StockX has sold Nike-branded Vault NFTs at prices many multiples above the price of the physical Nike shoe”¹⁶⁶ and that “significant price discrepancies continue, and as of the [then] current date [May 2022] certain Nike-branded Vault NFTs [were] still selling for thousands of dollars above the price of the physical shoe.”¹⁶⁷ This section provides a description of how the price of Vault NFTs for Nike shoes evolved in 2022, and explains how those dynamics are consistent with the pricing patterns of both historical and more recent examples of assets linked to new technologies.

A. How the price of Vault NFTs for Nike shoes evolved in 2022

75. On January 18, 2022, StockX announced the release of Vault NFTs.¹⁶⁸ The first Vault NFTs that StockX released were for seven pairs of Nike sneakers and one pair of adidas sneakers. The Vault NFT of an eighth pair of Nike sneakers was also released on January 26, 2022. An overview of the Vault NFTs released by StockX linked to Nike sneakers, including the date of release, the number of Vault NFTs released, the number of peer-to-peer transactions, and the initial release price by StockX, is shown in Exhibit 3. As Nike sued StockX on February 3, 2022, StockX only released those eight Vault NFTs tied to Nike shoes. However, StockX continued releasing Vault NFTs for other brands, such as the Vault NFT Puma MB.01 LaMelo Ball Rick and Morty, which StockX released in March 2022 and which was traded 21 times,¹⁶⁹ and the Vault NFT Crocs Pollex Clog by Salehe Bembury Urchin, which StockX released in June 2022, and which was traded 31 times.¹⁷⁰

¹⁶⁶ First Amended Complaint, ¶ 63.

¹⁶⁷ First Amended Complaint, ¶ 65.

¹⁶⁸ StockX, “StockX Launches Vault NFTs,” January 18, 2022, <https://stockx.com/about/stockx-launches-vault-nfts>.

¹⁶⁹ StockX, “StockX Vault NFT Puma MB.01 LaMelo Ball Rick and Morty - US M 10,” <https://stockx.com/puma-mb01-lamelo-ball-rick-and-morty-vault-nft>.

¹⁷⁰ StockX, “StockX Vault NFT Crocs Pollex Clog by Salehe Bembury Urchin - US M 10,” <https://stockx.com/crocs-pollex-clog-by-salehe-bembury-urchin-vault-nft>.

**Exhibit 3: Summary Statistics of Vault NFTs Corresponding to Selected Nike Sneakers¹⁷¹
(2022)**

Model of Corresponding Nike Shoe	First Release Date	Number of Released Vault NFTs	Number of P2P Transactions	Initial Release Price	Physical Price (on StockX)
Air Jordan 1 Retro High OG Bred Patent	1/26/2022	208	358	\$300	\$295
Air Jordan 4 Retro White Oreo 2021	1/18/2022	100	142	\$400	\$462
Nike Dunk Low Retro White Black 2021	1/18/2022	100	137	\$220	\$282
Nike Blazer Low sacai KAWS Blue	1/18/2022	100	127	\$120	\$165
Nike SB Dunk Low Ben Jerrys Chunky Dunky	1/18/2022	3	9	\$1,250	\$1,334
Nike Air VaporMax 2019 CPFM	1/18/2022	3	3	\$600	\$900
Air Jordan 3 Retro A Ma Maniere W	1/18/2022	1	2	\$450	\$721
Nike Dunk Low Off White Lot 50	1/18/2022	1	1	\$750	\$1,103
Total		516	779		

Note: The initial release price for Vault NFTs linked to the Air Jordan 1 sneakers is inferred based on their uniform price of \$300 sold by StockX on the first day of release. “Physical Price (on StockX)” is the average price for the associated physical sneaker on StockX on the first release date.

1. The initial pricing of Vault NFTs

76. StockX initially priced the Vault NFTs at a discount compared to the price of the physical pairs on the platform, expecting an initial loss at the time of the launch given that it had to procure the physical shoes at the current market price to store in the Vault. For instance, the Vault NFT for the Nike Dunk Low Retro White and Black was initially offered for \$220, when the lowest ask price for the physical shoe on StockX at the time was just above \$300, reflecting a 27% discount.¹⁷² While the retail price on the Nike website was \$110, the shoe was sold out at the time the Vault NFTs were released.¹⁷³ [REDACTED]

[REDACTED]⁷⁴ Initially pricing at a loss is a standard strategy used by platforms until they

¹⁷¹ StockX, “Vault NFT Data,” STX0806025. See also StockX, “Vault Drop 1 Pricing,” January 11, 2022, STX0121216 (providing release prices).

¹⁷² StockX, “Vault Drop 1 Pricing,” January 11, 2022, STX0121216.

¹⁷³ Sole Retriever, “Why Does the Nike Dunk Low Panda Keep Restocking?,” September 12, 2022, <https://www.soleretriever.com/news/articles/why-the-nike-dunk-low-panda-restocks-all-the-time-carryover-releases>, (“The next Nike Dunk Low Panda restock is set for April 28th, 2023 through the Nike App in full-family sizing. Alongside this, we will see the Nike Dunk High ‘Panda’ restock in full-family sizing.”).

¹⁷⁴ Calculated as the difference between the Vault NFT initial price and the lowest ask at the time, relative to the Vault NFT initial price, weighted by the number of Vault NFTs offered. See StockX, “Vault Drop 1 Pricing,” January 11, 2022, STX0121216.

reach a critical mass.¹⁷⁵ StockX generates revenues through fees charged on peer-to-peer Vault NFT trades, as illustrated in Exhibit 2.¹⁷⁶

77. At the time, StockX’s CEO Scott Cutler said, when discussing Vault NFTs, that “optimally these should trade between our market price less fees.”¹⁷⁷ Shervin Moghaddam, StockX’s Vice President of Strategy, also expressed the idea that there should be an “equilibrium” between Vault NFTs and physical shoes.¹⁷⁸ Both views reflect that Vault NFTs were a new method of trading the physical shoes.

2. *The January 2022 spike*

78. On the first day of trading, the prices of the first Vault NFTs linked to Nike sneakers spiked. The average price of those Vault NFTs reached up to 7.2 times the prices of the corresponding physical pairs at the time for peer-to-peer sales.¹⁷⁹ On that day, a bug in the system prevented StockX from releasing all 308 Vault NFTs at the initial prices, which may have contributed to a sense of scarcity and price increases that were not intended by StockX’s launch pricing model.¹⁸⁰ StockX released the remaining 148 Vault NFTs at then-prevailing market

¹⁷⁵ Bruno Julien, Alessandro Pavan, and Marc Rysman, “Two-Sided Markets, Pricing, and Network Effects,” *Social Science Research Network*, 2021, pp. 1-100, p. 511 (“With introductory pricing, a firm subsidizes demand in one period and recovers the loss in future periods.”).

¹⁷⁶ StockX, “What fees are associated with Vault NFTs?,” April 14, 2022, <https://stockx.com/help/articles/What-fees-are-associated-with-Vault-NFTs> (“When selling an NFT, customers are subject to a 3% transaction fee plus a 1% payment processing fee.”).

¹⁷⁷ StockX, “Email From Shervin Moghaddam to Scutt Cutler and Yasir Malik,” January 20, 2022, STX0039795-801 at 795 (“What’s clear to me is that we need much more than 100 editions as optimally these should trade between our market price less fees. My guess is 10x daily volume in each sneaker at least in NFT.”).

¹⁷⁸ StockX, “Email From Shervin Moghaddam to Scutt Cutler and Yasir Malik,” January 20, 2022, STX0039795-801 at 795 (“That’s helpful guidance re: daily volume. Let us we [sic] on what those numbers would need to be. Ideally, this is all market driven - users submit to vault until prices between vault and physical stabilise and then the users maintain equilibrium between the two.”).

¹⁷⁹ This ratio is the average daily peer-to-peer trading price over the average daily physical price for Nike Blazer Low sacai KAWS Blue sneakers on January 18, 2022. See StockX, “Vault NFT Data,” STX0806025; StockX, “Physical Data,” STX0806026.

¹⁸⁰ StockX, “Email From Yasir Malik to Greg Schwartz and Jacob Fenton,” January 19, 2022, STX0102190-195 at 193 (“We were on track to sell out in minutes but some bugs meant that we sold only 162 of the 309 NFTs we had available before our asks were tied up and secondary trading started.”); StockX, “Email From Shervin Moghaddam to Scutt Cutler and Yasir Malik,” January 20, 2022, STX0039795-801 at 795 (discussing Vault NFTs: “optimally these should trade between our market price less fees.”).